

Harvesting Hope

Exploring the untapped potential
of Smallholder Cannabis Farming
in South Africa

*A case for inclusion of the ancestral
landrace farmers in Mpondoland*

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Master Thesis

Harvesting Hope: Exploring the untapped potential of Smallholder Cannabis Farming in South Africa

A case for inclusion of the ancestral landrace farmers in Mpondoland

by

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Declaration

I declare that this Master thesis titled 'Harvesting Hope: Exploring the untapped potential of Smallholder Cannabis Farming in South Africa' is my own work. It has been autonomously written and all sources it depends on have been acknowledged by complete referencing. Therewith, this research piece is unique and has not been submitted previously to any other institution or for any other qualification.

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Abstract

Within the global cannabis renaissance, South Africa aims, since the 2021 publication of the National Cannabis Master Plan, to create an inclusive medicinal, recreational and industrial cannabis sector. However, approximately forty thousand cannabis smallholders in the Eastern Cape Mpondoland are economically and politically excluded from this process. This study aims to review how the traditional cultivation of these ancestral farmers can be incorporated into the legal framework and whether an economically viable commercialisation of their landrace cannabis is possible. Given the economic hardship and declining living standards of farmers and the lack of academic studies on the region, this study bears a clear scientific and societal relevance. The thesis investigates the question: *‘How can the commercialisation of cannabis by smallholders in the Mpondoland, South Africa, be integrated into the formalised cannabis industry?’* The Sustainable Rural Livelihood Framework and Constructivist Grounded Theory form the theoretical foundation of the analysis. Data collection was done through a mix-method approach, combining 64 open-ended interviews, a quantitative household survey, participant observations and a literature review.

In answering the research question, this thesis shows that without targeted government intervention the inclusive cannabis industry is very unlikely to be realised. Particularly the economic and legislative contexts of smallholder commercialisation are highly challenging for smallholder farmers. This is mainly caused by the Eurocentric orientation of the legal framework and the neoliberal principle of free market competition, which reiterate the twentieth-century dynamics of economic and political marginalisation of the ancestral farmers. Despite the national government’s discourse emphasising inclusion, in practice farmers have received little to no support which gives reason to doubt the political will to implement inclusive cannabis policy. Nevertheless, the study shows that multiple opportunities for commercialisation of smallholder cannabis exist. Especially, the cultivation of landrace for biobased hempcrete building materials provides the most logical starting point to pilot commercialisation of smallholder cannabis.

Keywords: dagga; cannabis industry; inclusive policymaking; landrace cannabis; (M)pondoland; rural livelihoods; smallholder farmers; South Africa

Table of Content

Introduction and problem statement	1
Context.....	1
Problem statement	2
Research questions and structure	5
Theoretical framework	7
The Sustainable Rural Livelihoods framework	7
Justification of theoretical approach.....	8
The livelihoods analysis.....	9
Problematizing the Sustainable Rural Livelihoods framework	10
Grounded Theory	12
Three schools of Grounded Theory	13
Justification of theoretical approach.....	13
Constructing Grounded Theory	14
Integrating Grounded Theory and the Livelihoods Analysis	17
Methodology	19
Research type.....	19
Research population and sampling methods.....	19
The Mpondoland cannabis farmers	20
The remaining stakeholders.....	23
Research methods	24
Literature and document review.....	24
Open-ended interviews	25

Participant observation	27
The household survey and production measurement	28
Data analysis	29
Research ethics	30
Positionality	30
Research limitations	31
On the research population	31
On the incongruencies in legislation	32
On the infant industry	33
Chapter 1. Introduction to the South African cannabis industry	35
Introduction	35
The cannabis history of South Africa	35
The contemporary South African cannabis legislation	40
The National Cannabis Master Plan	41
Challenges for smallholder inclusion	50
A Eurocentric and neoliberal approach	50
Bridging discourse and reality	52
Information silos	53
Conclusion	55
Chapter 2. The Mpondoland landrace economy	57
Introduction	57
The status of cultivation in Mpondoland	57
Declining living standards	59
Impediments to alternative livelihood strategies	61

The Mpondoland landrace practice	63
Demography and geography	63
Production capacity	66
Into the landrace practice	67
The aspirations of ancestral farmers	74
Earning an income	74
Cultivating legally	76
Adopting an alternative livelihood strategy	77
Conclusion	78
Chapter 3. Smallholder representation and cooperatives.....	80
Introduction.....	80
What inclusive representation should look like	80
Challenges for inclusive smallholder representation	81
Smallholder cooperatives.....	82
Three existing forms of representation	84
The traditional form	85
The constitutional form.....	86
The independent form.....	87
Conclusion	88
Chapter 4. Alternative livelihood strategies	90
Introduction.....	90
The landrace as medicinal cannabis.....	90
Opportunities.....	90
Impediments	92

The landrace as recreational cannabis	94
Opportunities.....	94
Impediments	97
The landrace as industrial cannabis	98
Opportunities.....	98
Impediments	103
Livelihood strategies beyond the master plan	105
Alternative cannabis products	105
Alternative cash crops	106
Alternative cannabis-related activities	106
Conclusion	107
Chapter 5. An evaluation to move forward.....	110
Introduction.....	110
Preconditions for smallholder commercialisation	110
A special regulation for smallholders	110
Building on the traditional practice.....	111
Representative smallholder cooperatives	111
Exploration of market opportunities	112
A practical way forward	113
A broad approach.....	113
A focused approach.....	114
A diverse approach	116
Conclusion	117
Theoretical reflections	119

Introduction.....	119
The integrated theoretical model	119
Contributions of the theory.....	120
Theoretical improvements	123
The final conclusion.....	124
The main argument.....	124
The extensive rationale	125
Directions for future research.....	127
Recommendations	128
Bibliography	132
Literature	132
Policy documents	142
Video sources.....	143
Personal communication	144
List of Appendices.....	147
Appendix 1. Full List of Research Participants	148
Appendix 2. Forms of Consent and Example of Interview Guide	151
Appendix 3. Questions of the Household Survey	160
Appendix 4. Results of the Household Survey and Field Tests.....	161
Appendix 5. Ethical Guidelines.....	176
Appendix 6. Examples of Cannabis Field Mapping Exercise	177
Appendix 7. Comparative Analysis on Smallholder Entry to Cannabis Pathways....	180

List of Figures

Figure 1. <i>Schematic Representation of Livelihoods Practices, Aspirations and three Alternative Livelihood Strategies</i>	<i>9</i>
Figure 2. <i>Schematic Representation of Theoretical Sampling of Grounded Theory.....</i>	<i>15</i>
Figure 3. <i>Schematic Representation of Continuums Classifying Grounded Theory.....</i>	<i>16</i>
Figure 4. <i>Integrated Theoretical Model of Grounded Theory and the Livelihoods Analysis</i>	<i>17</i>
Figure 5. <i>Schematic Representation of the Research Population</i>	<i>19</i>
Figure 6. <i>Map of the Eastern Cape with the Mpondoland Region Highlighted.....</i>	<i>20</i>

List of Abbreviations

ANC	African National Congress
API	Active Pharmaceutical Ingredient
ARC	Agricultural Research Council
BBBEE	Broad-Based Black Economic Empowerment
CBD	Cannabidiol
CSIR	Council for Scientific and Industrial Research
DALRRD	Department of Agriculture, Land Reform and Rural Development
ECHPPI	Eastern Cape Hemp Pilot Project Initiatives
ECRDA	Eastern Cape Rural Development Agency
ECSECC	Eastern Cape Socio Economic Consultation Council
EIHA	European Industrial Hemp Association
EU GMP	European Union standards of Good Manufacturing Practices
FECO	Full Extract Cannabis Oil
GEAR	Growth Employment and Redistribution
INCB	International Narcotics Control Board
IIC	Indian Immigrants Commission
IKS	Indigenous Knowledge Systems
MAFISA	Micro Agricultural Financial Institutions of South Africa
RDP	Reconstruction and Development Programme
RIS	Re-imagined Industrial Strategy
SABCC	South African Bast Crop Consortium
SACP	South African Communist Party
SAPHRA	South African Health Products Regulatory Authority
SAPS	South African Police Service
SME	Small and Medium-sized Enterprises
THC	Tetrahydrocannabinol

Glossary and Definitions

The following definitions are particularly instructive to reader with a basic understanding of the cannabis industry. For a full understanding of the background of this study these terms can be studied integrally. Alternatively, it would suffice to briefly scan through this section to see which terms are elucidated and to come back to their definitions if the thesis is not self-explanatory on them.

| Cannabis Sativa Linnaeus

Cannabis Sativa L. is a multipurpose plant from which various parts (roots, stem, fibres, flowers, and seeds) can be used to make a wide range of products. Throughout history the plant has mainly been used as medicine, food, construction material and psychoactive drug. There are over a thousand different cannabis strains (Hazekamp, et al., 2016), often categorised into three groups: cannabis sativa (origin in India), cannabis indica (origin in Afghanistan, Pakistan & Turkestan) and cannabis ruderalis (origin in Europe & Russia). Besides their distinct physiology, these groups are based on the varying cannabinoid and terpene profile which influence the plants' physical properties, smell, taste, and effects. The desired application of the plant is thus strongly dependent on the cannabis type and cultivar selected. For example, the specific characteristics of male plants are suitable for construction materials while female plants are mainly used for medicine and psychoactive stimulants. This is also where a variety in terminology stems from. Cannabis used for construction material is often called hemp (according to European standards contains less than 0.2% Tetrahydrocannabinol (THC)). Cannabis grown seedless and used for the recreational products is referred to as 'sinsemilla' (without seed), high-grade or 'dagga' in South Africa.

| Landrace cannabis

Landrace cannabis refers to a group of relatively stable cannabis strains which form an exception to most hybrid cannabis strains. Although landrace cannabis is almost never legally registered, it is to be considered special because of its century's old pathway of natural selection and adaptation to its climatological environment. Because the genetics of landraces are not entirely stable and rarely indigenous to a region, they are difficult to categorise. Nevertheless, the limited genetic diversity and strong pest and drought

resilience of landraces are value characteristics for modern cannabis breeding (Clarke & Merlin, 2013). Although landraces are regarded valuable for their potential medicinal properties, more academic research on this is required. The landrace strain central in this study is historically adapted to the Mpondoland area and is known under the names: 'Insangu (marijuana)', 'TK (Transkei)', 'Transkei Gold', 'the (M)pondo', 'Mpondo Gold', 'Apondo Mystic', 'Isingani', or 'Snanga'.

| Cannabis stakeholders

Cannabis stakeholders is an umbrella term for all individuals and stakeholder groups involved in the South African cannabis industry. These stakeholders can be divided into public sector, private sector, civil society organisations and knowledge institutes.

| Cannabis Commercialisation

According to the latest version of the Cannabis for Private Purposes Bill, commercialisation of cannabis refers to the possibility of South African stakeholders to legally, autonomously and safely cultivate, trade and buy cannabis (and related products) for medicinal, recreational, and industrial purposes (Sabinet Law, 2022). In this thesis, successful cannabis commercialisation for smallholders means that rural livelihoods can at least sustain a basic income and utilise financial gains to improve their quality of life.

| Inclusive cannabis industry

This concept stands central to the thesis and refers to the political vision of the South African government to realise an economically thriving and sustainable cannabis industry with an equal integration of all stakeholders. An emphasis is found on the integration of smallholder cannabis farmers, that are shifting from illegal cultivation towards legal commercialisation.

| Structure of the South African government

To understand how the South African cannabis industry is politically embedded, a basic grasp on the constitutional governmental structure is handy. The South African governance is organised by a constitutional democracy in which the classical division of executive, legislative and judiciary powers ensure a legitimate representation (South

African Government, 2022b). The government has divisions on the national, provincial, local municipal and ward levels, which are mutually interdependent and interrelated.

| Bottom-up and Top-down

Bottom-up and top-down approaches in this thesis refer to the strategies which can be used to facilitate smallholders' commercialisation of cannabis. On the one hand smallholder farmers are autonomous agents of change and initiate the change of their farming practices from the local level upwards. This is called bottom-up development and forms an essential element of a sustainable change towards legal cannabis cultivation. On the other hand, realising legal commercialisation also relies on formal regulations and guidelines provided by national and provincial government. Without these institutional top-down structures, the formalisation of the smallholder practice cannot be realised.

| Neoliberalism

Neoliberalism is briefly defined because it is central to the thesis' argument. In this work the term refers to an economic doctrine based on the Adam Smith's conception of the free competitive market (Narsiah, 2002, p. 3). The doctrine became dominantly adopted globally after World War II and is characterised by fiscal austerity, deregulation and privatisation. Typically also a transfer of state competences to the private sector is witnessed, and thus public interference in the free market is discouraged. South Africa is viewed to have institutionalised the neoliberal principles within development policy from 1996 onwards with the adoption of the Growth, Employment and Redistribution (GEAR) plan.

| Eurocentrism

Eurocentrism stands central to this thesis and refers to the worldview wherein principles of Western civilisations or biases are favoured over non-Western civilisations (Hobson, 2012). When historically applied, the term does not only refer to European values, but refers more broadly to influences of European (neo)colonialism or other forms of imperialism (Wasserstrom, 2001). In this study the term mainly refers to the Western-based legal framework of the South African cannabis industry.

Introduction and problem statement

||| Context

Since the end of the twentieth century, Cannabis Sativa L. is making a comeback after a long period of legislative condemnation. Currently, the plant's multifarious potentials for food, medicine, construction materials, and recreational drugs become wider recognised, and many national governments intend to build thriving cannabis economies (Ramashala et al., 2021; Rightford, 2020). Illustratively, the global cannabis industry is expected to grow exponentially from the US\$12 billion in 2018 to an estimated US\$166 billion by 2025 (Euromonitor International, 2021). Where historically Uruguay, The Netherlands and Canada had the most progressive cannabis policy, currently also South Africa intends to complete their legal framework for the commercialisation of cannabis.

South Africa has a long history with cannabis, but became a frontrunner in decriminalising the plant in 2019 when, under pressure of civil society organisations, the Constitutional Court mandated adult cannabis consumption to be legal. This court ruling kick-started a process towards a new policy design to regulate the commercialisation of the plant. In 2021 the national government issued the National Cannabis Master Plan (from here onwards, the Master Plan) as a guiding document to formalise and regulate cannabis cultivation and trade. As its foundation, the Master Plan distinguishes three pathways, namely for medicinal, recreational and industrial cannabis. Since the monetary value of the current South African cannabis industry is estimated at R28 billion (US\$ 1,6 billion), the expectations regarding unleashing the plant's potential for sustainable economic growth, job creation and poverty alleviation are high (Ramashala et al., 2021, p. 14).

However, transforming an illegal crop industry towards a legal version is a major challenge, particularly in light of the long history of prohibition. There are only a few precedents of successful cannabis policy change, for which an innovative legal approach is required. Additionally, the potential harms of legalisation would need to be mitigated, and egalitarian commercialisation be promoted. As such, integrating all existing

cannabis stakeholders equally in the formalised industry is an arduous task. On this topic, in the 2021 State of the Nation Address, the South African president Cyril Ramaphosa acknowledged this challenge by drawing specific attention to the integration of marginalised and small scale cannabis farmers in the Eastern Cape and KwaZulu-Natal (Clarke & Riboulet-Zemouli, 2021; Kepe, 2003; The Presidency of the Republic of South Africa, 2021).

Most of these smallholder cannabis farmers are rurally dispersed across the Dagga Belt, which traverses the Eastern Cape, KwaZulu-Natal, Lesotho, and Swaziland (Lewis, 2020). Their highest concentration is found in the mountainous Mpondoland area which became, simultaneously with the twentieth century War on Drugs, subject to violent criminalisation, isolation, and socio-economic marginalisation (Lakčević, 2016). Although historically a network of urban intermediate traders provided these farmers with a basic income for their cultivation, in recent years they have witnessed their markets evaporate under recent economic and regulatory changes. In tandem, these farmers are currently unable to apply for licences to cultivate their regional Mpondo landrace strain. Besides this, political consultation and representation of smallholders is substandard, which has prevented external support from arriving in the places it is most needed. So, while the general cannabis industry is moving forward, these farmers are hit hard by a wide range of exclusionary dynamics.

||| Problem statement

The central problem in this study, and its motivation, arise from the merger between these socio-historic patterns of political and economic marginalisation and the recent political ambitions for cannabis policy revision. The exploratory literature study shows that the rationale in the Master Plan aims to employ cannabis for rural development through economic growth, job creation and poverty alleviation (Ramashala, et al., 2021). Despite the first steps formulating a comprehensive policy framework for medicinal, industrial, and recreational cannabis are taken, this seems to remain a pressing challenge to create an inclusive cannabis industry which balances the interests of all stakeholder groups. Illustratively, the recent deregulation of cannabis policy and the promotion of free-market dynamics have set a very challenging context for smallholders

to enter the market. As direct and indirect consequences of this struggle, smallholder markets are rapidly decaying and living standards have already dropped among the lowest in the country. With incomes structurally falling, food shortages rising, and political marginalisation ongoing, smallholders become increasingly dependent on external financial- and agricultural support. The provision of appropriate smallholder support might be imperative to prevent this downward spiral from continuing. Therefore this study starts with the observation that the integration of smallholders, and the mitigation of their economic and political exclusion, requires a strategy specifically focused on this target group.

However, this is where a major knowledge gap is found. It turns out that for most cannabis stakeholders in the South African context it remains unclear how the traditional practices of cannabis smallholders can be integrated into the formalised economy. In fact, most stakeholders, including government representatives, have only a very basic insight in what the traditional cannabis practice looks like, and more importantly, how farmers see their own future within the changing industry. Even though the Master Plan stresses the need for smallholder inclusion, it provides little guidelines for a strategy on how farmers' aspirations and practices can be connected to the proposed cannabis pathways. This is problematic because for successful smallholder integration, it must be determined whether farmers' produce will be applied and regulated for medicinal, recreational or industrial purposes (Budden, 2016; Clark, 2019b). Since smallholders are positioned in such a fragile economic and political position, bottom-up attempts for inclusion have so far neither reached policymakers (N. Heinemann, Personal Communication, March 29, 2022). Although smallholder consultation and representation does take place, most rurally based farmers experience a lack of participation in the process of policy change. Lastly, also the past and ongoing criminalisation in rural areas negatively impacts on the trust-building needed for political participation (Howell, 2016, p. 8).

Given the shortage of knowledge on these dynamics, this thesis aims to review and advance the formulation and implementation of smallholder-focused cannabis policy in South Africa. Besides this, it also offers a platform for marginalised farmers to speak their minds and to collectively present their aspirations and needs. Since the study

incorporates both the political ambitions and policies, as well as the empirical reality of smallholder farmers on the ground, it aims to bridge these worlds and has the potential to become a tool for inclusive policymaking. This aspect reflects the direct societal relevance for this study.

The two theoretical frameworks taken to support the study are Sustainable Rural Livelihoods Approach (Scoones, 1998) and Constructivist Grounded Theory (Charmaz, 2006). The combination of these theories form a valuable addition to the scant research on the case study. Where the Livelihoods approach provides the guiding concepts to study the smallholder cultivation and their relation to the proposed policy framework, the Grounded Theory offers the procedural steps to formulate a theoretical model synthesising the crucial elements for smallholder inclusion. The study rests on the qualitative research methods of a literature and document review, open-ended interviews and participant observations done during the three-month fieldwork period. As quantitative method, a household survey among the smallholder farmers was conducted to quantify their production and to estimate its economic value.

Foreshadowing the results of this thesis, it is argued that the economic and legislative contexts in which the cannabis commercialisation would need to take place are highly challenging for ancestral cannabis farmers in Mpondoland. Particularly the Eurocentric orientation of the legal framework and the neoliberal principle of free market competition reiterate their historic economic and political marginalisation from the twentieth-century period of cannabis prohibition. Despite the national government's discourse emphasising the inclusion of cannabis smallholders, in practice farmers have not been supported. This gives reason to doubt the political will to implement inclusive cannabis policies.

Nevertheless, the thesis identifies multiple opportunities for smallholder commercialisation. As a practical result, these findings suggest that a protected market segment in the industrial markets provides the most logical starting point for a pilot project exploring the economic viability of ancestral farmers' landrace cannabis. More specifically, in the short run farmers will most likely benefit from converting their landrace stalks into hurd, which can be used for biobased hempcrete building materials.

||| Research questions and structure

In order to approach this problem statement the following main research question has been formulated:

‘How can the commercialisation of cannabis by smallholders in the Mpondoland, South Africa, be integrated into the formalised cannabis industry?’¹

Given the complexity of this research question, and the considerable size of this report, a tight structure has been provided. After the introduction of the problem statement, theoretical framework and methodological approach, the study’s results are structured in five chapters following five research questions. First, chapter 1 reviews in which context smallholder commercialisation will take place, for which the historic foundation of colonialism and the legislative framework of the current South African cannabis industry are presented. These factors yield a good understanding the exclusionary character of the formal industry for smallholder farmers. The question guiding this chapter is: *What is the historical background and current legislative status of the South African cannabis industry?*

The exploration of this context forms a solid basis to engage with the target group and their cultivation practices that need to be integrated into the current legal framework. This is done in chapter 2 by presenting the economic status and the particularities of the traditional landrace practice from an ethnographic perspective. Subsequently also the ancestral farmers’ aspirations are discussed to show farmer’ perspectives on possible future livelihood strategies. The chapter is structured by the question: *What is the current status of the smallholder cultivation in Mpondoland, and what are the current practices and aspirations of the ancestral cannabis farmers?*

Chapter 3 elaborates on farmers’ representation and cooperatives-building which are important preconditions for successful landrace commercialisation. By employing

¹ Note that the research question implicitly assumes that commercialisation is indeed possible. This is accounted for by the pathways of commercialisation proposed in the Master Plan.

existing forms of farmers' representation, smallholder cooperatives can bridge the gap between the traditional cultivation practice and the legal framework. Therefore the benefits and possible forms of their organisation are discussed. The following question guides the chapter: *What are the benefits of smallholder cooperation, and how does it relate to existing forms of representation of the ancestral cannabis farmers in Mpondoland?*

After the first three chapters have clarified the legal context in which commercialisation must take place and what the cultivation practices look like, chapter 4 reviews in which cannabis market segment smallholders have the greatest chances of success. This exploration is based on the integration of chapters 1 and 2, but adds to this the perspectives of industry stakeholders to present the most viable market opportunities for smallholders. In doing so, the chapter merges legislative, economic and practical opportunities and challenges for landrace commercialisation. The chapter answers the question: *What are the opportunities and impediments to integrate the smallholder practice in the proposed pathways of the National Cannabis Master Plan?*

The evaluation chapter 5 integrates the findings of the previous chapters and discusses on what preconditions and with what approach the most alternative livelihood strategies identified can be realised. The chapter follows the question: *On what preconditions does smallholder cannabis commercialisation depend, and what are the most favourable approaches for its implementation?*

After a final reflection on the theoretical frameworks and conclusion, a set of policy recommendations² on the practical approach of smallholder commercialisation is presented.

² For policymakers, an overview of the study's concrete results can be obtained by reading (1) the Abstract, (2) Introduction and problem statement, (3) chapters two, four and five, (4) Conclusion, and (5) Recommendations. Appendix 4 presents an overview of the quantitative data of the smallholder cannabis economy in Mpondoland. In the policy brief accompanying this thesis these elements are summarised.

Theoretical framework

The theory underpinning this thesis consists out of two distinct theoretical approaches. These are, the Sustainable Livelihoods Framework (Scoones, 1998; 2015) and the Constructivist Grounded Theory (Charmaz, 2006; Glaser and Strauss, 1967). These two frameworks are used complementary for reviewing the interplay between the ancestral cultivation practices and the political and economic macro context in which they are embedded. The combination of these approaches distinguishes this thesis from prior research on this topic. The Sustainable Livelihoods Framework suits a micro perspective on the traditional landrace practices to determine the starting point for transitioning to alternative livelihood strategies. The Constructivist Grounded Theory aims to approach the South African cannabis industry from a macro perspective to construct a substantive theoretical model from the empirical data. Because of the current illegal nature of the study case, and thus its innovative character, the building of a new theoretical model is valuable. The interplay between the micro and macro perspective yields the most realistic description of how smallholder inclusion can be most effectively approached.

||| The Sustainable Rural Livelihoods framework

As the first theoretical approach, the guiding steps of the Sustainable Rural Livelihoods Framework (from here onwards Livelihoods Framework) are taken to assess the agricultural practices and aspirations of cannabis smallholders in Mpondoland. The Livelihoods Framework was first conceptualised by the British agrarian sociologist Ian Scoones in 1998. In his famous publication '*Sustainable Rural Livelihoods: A framework for Analysis*', he presented the framework to study agrarian change in rural developing settings starting at the farming household. At the time, this theoretical approach was highly innovative because it took the rural livelihood as the main unit of analysis. Scoones adopted agrarian sociologists Robert Chambers and Gordon Conway's (1992) definition of the livelihood, which is as follows,

'A livelihood comprises of the capabilities, assets (material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope

with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base.'

(Scoones, 2015, p. 6)

Additionally, Scoones offered a set of indicators to study how livelihoods, in a particular context, use a combination of resources and activities to promote livelihood strategies to economically reproduce themselves (Scoones, 1998, p. 3). This exercise is the gist of the livelihoods approach and is called the livelihood analysis.

With his theoretical approach, Scoones connected to the development thinking and practice of the 1990s. Development theory at the time, as proposed by Chambers and Conway, centred around the idea that empowerment of rural communities was a crucial step to understanding, and possibly overcoming, the challenges of poverty, inequality, and environmental degradation. Furthering this tradition, Scoones conceptualised the livelihoods model to provide an interdisciplinary and bottom-up tool to study rural livelihoods (Apgar, 2019). Due to the model's capacity to show how livelihoods are economically and institutionally integrated and interrelated, until today it is popular among development scholars and practitioners alike. Also, its micro-perspective and attention for context-specific problems, offers scholars a contra-perspective against the twentieth-century meta theories of Marxism and neoliberalism (De Haan, 2012, p. 6).

|| Justification of theoretical approach

There are three main reasons why the Livelihoods Framework is suitable for this study. First, the model allows the studying of the agricultural practice of marginalised rural populations within a development context. This connects well to the ethnographic description of the ancestral farmers practices. This ensures that the practices of rural communities remain at the centre of this thesis despite their integration into the wider political-economic context.

Secondly, the Livelihoods Framework strengthens Grounded Theory by addressing farmers' perspectives on the livelihoods level. According to Scoones (2015, p. 34) livelihoods are multidimensional, temporally and spatially variable and socially differentiated. Besides that, they are affected by multiple factors, ranging from local

conditions to broad structural political and economic processes. The interdisciplinary character of the model allows for a precise description of how farmers' practices relate to the broad cannabis pathways formulated in the Master Plan.

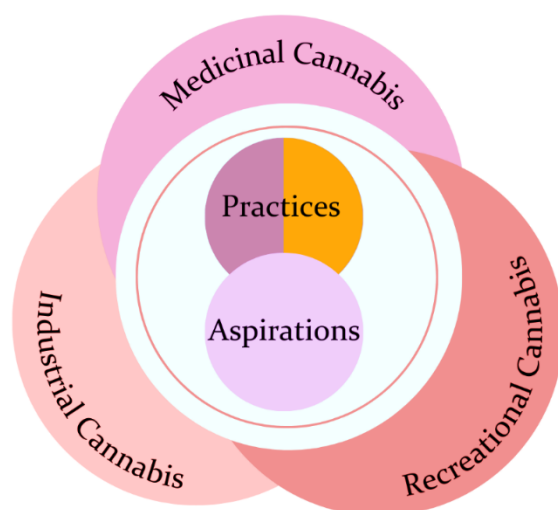
A last benefit for the study lies in the flexible nature of the Livelihoods Framework. Scoones actively promotes the adaptation of the theoretical model to different study contexts such as livestock, fisheries, forestry, agriculture, health and urban development (Scoones, 2015, p. 10). This forms a solid base for the application of Scoones' concepts in the context of cannabis' illegal practices.

|| The livelihoods analysis

Since the Livelihoods Framework is originally a broad theoretic approach, this study only makes use of four of its core concepts, (1) the sustainable livelihood, (2) livelihood practices, (3) livelihood aspirations, and (4) livelihood practices. Together these four elements constitute the livelihoods analysis provide enough tools to determine where the traditional farmers practices fit the legislative. For insiders, this study omits the discussion of livelihood capitals and the livelihood strategies proposed by Scoones. Thus the livelihood strategies of agricultural intensification/extensification, migration and diversification are only lightly discussed in chapter 2 and 4. Figure 1 below schematically represents the livelihoods analysis applied to the South African smallholder context and forms the core of the integrated theoretical model in Figure 4 later on.

Figure 1

Schematic Representation of Livelihoods Practices, Aspirations and three Alternative Livelihood Strategies



The central concept of the livelihoods analysis is the sustainable livelihood. The sustainable livelihood mainly focuses on economic strategies to earn a living and to reproduce itself. As precondition for this, Scoones stresses agency, the capacity to autonomously act, in order for livelihoods to sustain themselves. In this study, the livelihood of the ancestral cannabis smallholders in Mpondoland is taken as the most important unit of analysis. The livelihood may vary in size and composition, ranging from individual farmers to their extended families.

In order to review how livelihoods cope with changing societal forces surrounding them, which in the case of cannabis smallholders entails their transition towards legality, their livelihood can be split up in two indicators. These indicators are the livelihood practices and aspirations. Farming practices of smallholders consist of resources and activities (see division in Figure 1) and together with the aspirations constitute the livelihood, as visualised by the two dots in the circle at the centre of Figure 1.

As a next step, also the aspirations of the livelihood-members are determined to indicate which pathway of agrarian change can possibly occur. Scoones (2015) calls these aspirations 'livelihood outcomes', which simply refer to the self-determined goals that livelihood-members pursue.

When the livelihoods' practices and aspirations are determined, the livelihoods analysis continues to review which alternative livelihood strategies connect to their current situation. To only review the limited set of legal livelihood strategies for the current South African context, the three pathways of medicinal, recreational, and industrial cannabis, as defined in the Master Plan are taken as a starting point. In Figure 1, the three outer wings represent the three cannabis pathways of the Master Plan as the market segments in which the alternative livelihood strategies must be integrated.

|| Problematising the Sustainable Rural Livelihoods framework

Despite the popularity of the Livelihoods Framework, it has been subject to a wide range of critiques of which three are essential. First, the most fundamental critique of the Livelihoods Framework is on its interventionist character and its limited reflection on the moral foundations of development thinking (Haan, 2012, p. 6; Morse & McNamara,

2013). Advocates of bottom-up development strategies, rooting for the individual agency of people, argue that real development must be endogenously induced and that any external interventions would corrupt the genuineness of this process (Potter, Binns, Elliott, & Smith, 2018, p. 125). In this view, the commercialisation of traditional agriculture is highly contested (Emery, 2006). Taking into account this deep critique, this thesis aims to highlight multiple scenarios towards economic betterment based on real-life experiences of farmers, rather than starkly promoting externally strategies of change. Many scholars have found that the livelihoods analysis is a helpful tool to satisfy this objective (Scoones, 2015, p. 10).

Secondly, the Livelihoods Framework is criticised for its microscopic and localised focus. De Haan (2012, pp. 4, 349) argues that the focus on individual agency of rural farmers ignores the wider societal structures of power impeding the farmer's autonomy. This would have given the framework an isolated and unrealistic reputation. This thesis addresses this critique by complementing the Livelihoods Framework with the Grounded Theory approach.

Lastly, there is much unclarity about how the output of the livelihoods analysis can lead to policy changes or improvement of intervention strategies (Morse & Mcnamara, 2013). This point of critique challenges the descriptive and static character of the framework, which is also acknowledged by Scoones himself (2015, p. 41). Again, the addition of Grounded Theory enables this study to identify the directions of policy recommendations and therewith addressing this theoretical shortcoming.

||| Grounded Theory

As the second theoretical approach Grounded Theory is taken. This theory was first introduced by Glaser and Strauss in 1967 and rapidly gained popularity among the social science research community. At that time, the sociological method revolutionised the function of theory within social research. The premise of Grounded Theory is that in order for social researcher to understand the volatile social reality, generation of new theories is necessary. In the book '*Constructing Grounded Theory*' Kathy Charmaz redefined Grounded Theory as,

'a process in which varying methods for data collecting, comparison and analysis leads to the construction of theories thoroughly grounded in empirical data.'

(Charmaz, 2006, p. 2)

Although Grounded Theory itself is not a research method, there is a strong focus on the procedural steps to reach a theoretical level. This is why Grounded Theory, and its corresponding method, are always discussed in tandem and thus also deserve some elaboration here.

Grounded Theory distinguishes itself from other theory in various ways. Where both qualitative and quantitative methods commonly aim at data collection in order to test existing theories, Grounded Theory reverses this process and focuses on the discovery of new theories from the data (Glaser & Strauss, 1967, pp. 1-17). By using empirical material to formulate a conceptual and generalisable theory, the approach stresses the importance of inductive reasoning. Together with the evaluation standard of falsification, Grounded Theory is praised for its potential to reach a high theoretical and contextual precision. With these characteristics, Grounded Theory expresses important critiques on the dominant descriptive and deductive character of social research. Lastly, the model adds new practical guidelines to social research practice by challenging the long-standing methodological consensus (Charmaz, 2006, p. 5). These characteristics add value to the application of Grounded Theory to the South African cannabis industry in order to show the underlying dynamics of the empirical data.

|| Three schools of Grounded Theory

In contrast with the critique on the Livelihoods Framework, fundamental criticism on Grounded Theory has led to three distinct schools. As the first school, the classic Glasarian Grounded Theory is characterised as informal and flexible. Illustratively, its method allows for the use of a multifarious data set consisting of qualitative and quantitative sources. Theoretical sampling, which will be explained below, is alternated with various coding styles and a multitude of data processing techniques (Glaser, 1978; Glaser, 1992). Secondly, the Straussian school of Grounded Theory is born out of critique on the informal character of the Glasarian school. Especially the development of theoretical sensitivity, a kind of intuitive skill of the researcher, was deemed too ambitious for novice researchers. Therefore, the Straussian school prescribed a strict and structured approach to chronologically convert the selectively sampled data into formal theory (Strauss & Corbin, 1990).

Thirdly, and most relevantly, constructivist Grounded Theory emerged from Becker's (1998) and Silverman's (2001) critiques on theories lacking an abstract level. In this tradition, Kathy Charmaz (2006, pp. 35-131) took the 1980s constructivist epistemological critique and applied it to Grounded Theory. According to her school the researcher and research participants must be viewed as co-constructors of meaning. The researcher's subjectivity, depending on time, place, and culture, need to be acknowledged. By placing the researcher, the process and product in historical, cultural, situational, and interactive context, constructivist Grounded Theory has a much more reflexive character. Its theories are no longer limited to one particular meaning, but complexity and relativity are part of them. Charmaz has preserved the methodological steps of Glaser and Strauss and even expanded the choice of procedural steps. Therefore the Constructivist Grounded Theory is praised for this strong practicability of guidelines and mitigation of theoretical rigidity. These attributes explain why this study leans the most to the constructivist approach of Grounded Theory.

|| Justification of theoretical approach

There are three main reasons why constructivist Grounded Theory is a suitable framework for this thesis. First, the South African challenge to integrate smallholders

into a legal industry presents a unique situation. Even globally, academic studies on merging illegal and legal crop industries are scarce and therefore theoretical models suiting these particular contexts are virtually absent. Extensive theoretical exploration in preparation for this research, including Conflict Theory (Turner, 1975), Actor-Network Theory (Latour, 1996), and Criminalisation Theory (Von Hirsch, 2014), showed that most sociological approaches do poorly fit the particularities of this study case.

Second, the data collection process connects well to theoretical saturation principle central in Grounded Theory. From the expanding data set of stakeholders accounts, 64 interviews in total, a pattern of clearly demarcated thematic fields has emerged. These increasing similarities in the empirical data enabled the identification of a set of preconditions for commercialisation which have laid the foundation for policy recommendations.

As a last aspect, constructivist Grounded Theory puts a strong focus on the positionality of the researcher, which has been of great importance in the South African research context. Conducting fieldwork among the indigenous communities of rural Mpondoland has brought forth cultural differences and reasoning styles. The cultural and ethnic backgrounds of all stakeholders involved have inevitably influenced the interpretation of the data, and thus also affected the construction of meaning. The same applies to participation of the wide variety of stakeholder groups. These different groups, such as illiterate farmers, wealthy cannabis entrepreneurs, activist civil society organisation and government representatives has made constructivist nature of the analysis apparent.

|| Constructing Grounded Theory

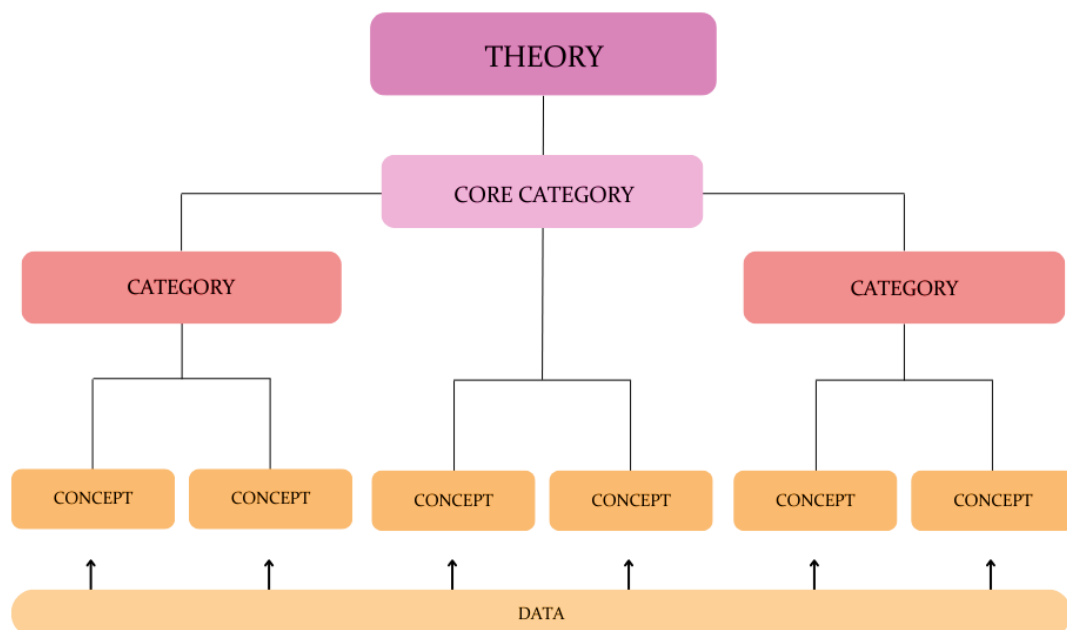
Given the strong focus on the method of data collection and analysis, the three practical steps of Grounded Theory formation are briefly outlined here. In converting empirical data into a Grounded Theory, first the constructivist Grounded Theory requires theoretical sampling to be practiced (Charmaz, 2006, p. 96). Theoretical sampling refers to the process of acquiring appropriate data in accordance with the theoretical concepts developed. Collecting, coding and analysing data are important steps practiced in the field and facilitate the context-specific character of the theory (Glaser and Strauss, 1967,

p. 45). In the constructivist tradition, simultaneously the theoretical sensitivity and reflexivity are exercised by the researcher.

As a second procedural step, constant comparison of data is applied. According to Glaser and Strauss, the comparison of both qualitative and quantitative data elements leads to an increasingly nuanced and abstract linguistic and conceptual taxonomy of the empirical reality (see Figure 2 below). While the data set is diversified and substantiated, the data can be thematically classified into overarching concepts which are the building blocks of a potential new theory. Subsequently, these concepts now reflect the data on a more conceptual level and further comparison reveals their properties vis a vis a more generalised category. Concepts often turn out to represent conditions or consequences of a broader category. Working within the boundaries of the research question, the repetitive grouping of concepts into categories gains a higher theoretical precision and finally leads to theoretical saturation. This is when all data falls within existing categories and one core category can be identified (Glaser & Strauss, 1967, p. 61). This core category embodies the highest theoretical precision and forms the main premises of the constructed theory.

Figure 2

Schematic Representation of Theoretical Sampling of Grounded Theory

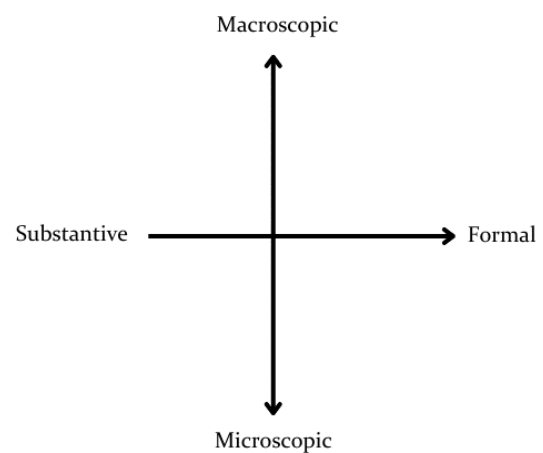


As the final step, it can be determined which type of Grounded Theory is developed. Glaser and Strauss (1967, p. 79) present two continuums on which theories can be classified (see Figure 3 below). First, there is the continuum between *substantive* and *formal* theory. Substantive theory is a theoretical model that can only be applied to a particular substantive area. Formal theory on the other hand consists of elements with are of a higher conceptual nature and can thus be applied to a broader context. The second continuum classifies Grounded Theory as *macroscopic* or *microscopic*. These categorisations can apply to the size and scope of social units to which the theory applies, but can also refer to

the geographic or thematic width of the model. These continuums are revisited in the theoretical reflections chapter.

Figure 3

Schematic Representation of Continuums Classifying Grounded Theory



Integrating Grounded Theory and the Livelihoods Analysis

Figure 4

Integrated Theoretical Model of Grounded Theory and the Livelihoods Analysis

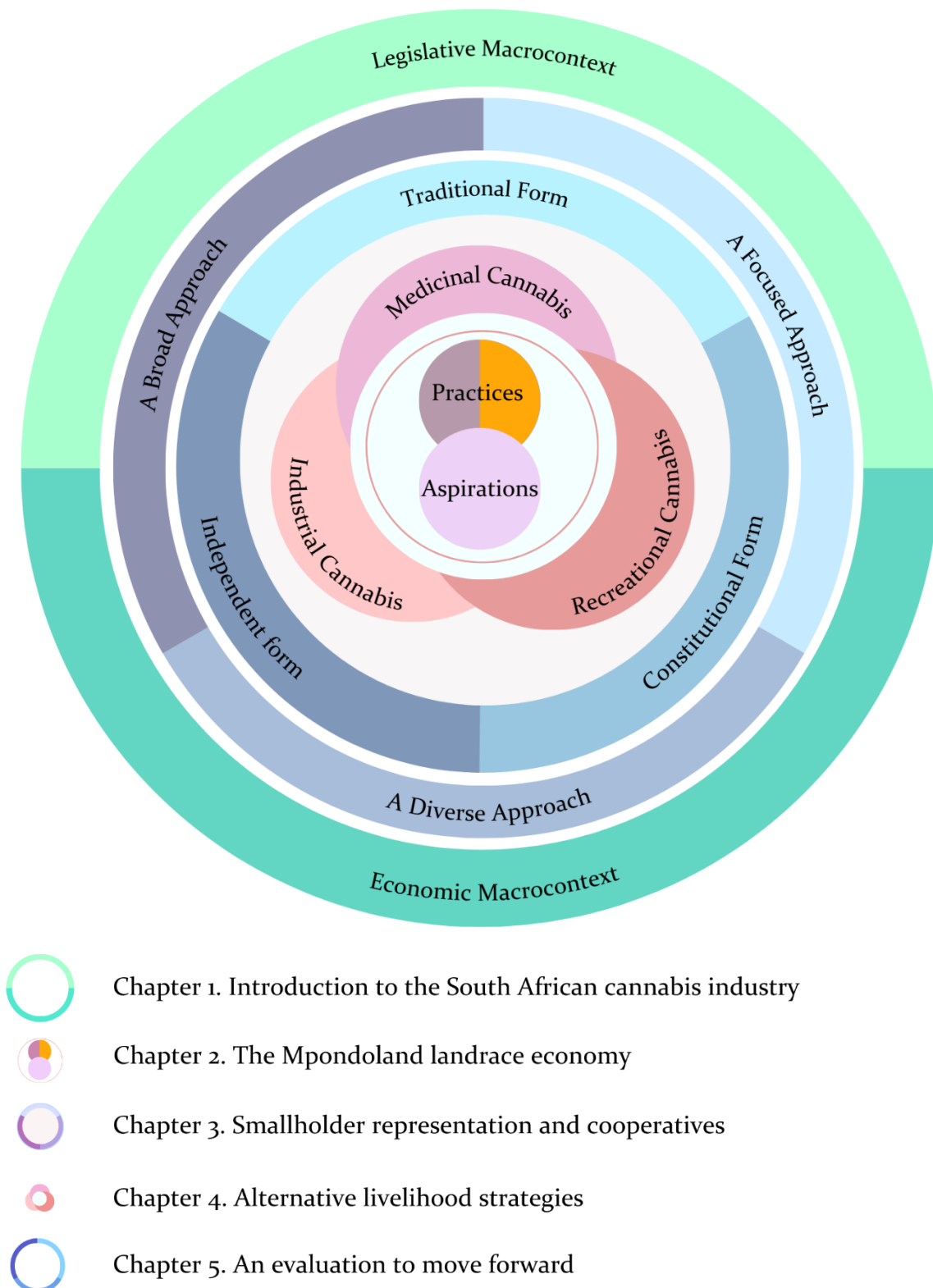


Figure 4 above shows the theoretical model resulting from the integration of Grounded Theory and the Livelihoods Framework. The model provides a set of key elements to be taken into account when smallholder inclusion is to be understood or strategically approached. The model is based on the assumption that smallholder inclusion can best be realised if as many of its elements are given consideration. Since smallholder commercialisation is a complicated process, the model is not a practical roadmap but must rather be seen as a tool for prioritisation of strategies.

As visible, the model consists of five elements which correspond with the five chapters of this study. First, the model's outer ring, chapter 1, focuses on the macro context of Eurocentrism and neoliberalism through which the context in which smallholders must be integrated, can be understood. Then at the centre of the model, chapter 2, the traditional cultivation practice and its characteristics are analysed through the livelihoods analysis. This provides a thorough understanding of the smallholder practice on which inclusive policy should be built. Subsequently, the inner blue ring, chapter 3, represents the different models of smallholder cooperatives which are an essential tool to streamline farmers' practices and the proposed policy framework. The three red wings in the model represent chapter 4 and reviews how industry stakeholders prioritise alternative livelihood strategies for smallholders according to economic, political, and practical indicators. Finally, the second ring from the outside represents the evaluation chapter which translates the study's findings to the practical approach of smallholder commercialisation.

Methodology

||| Research type

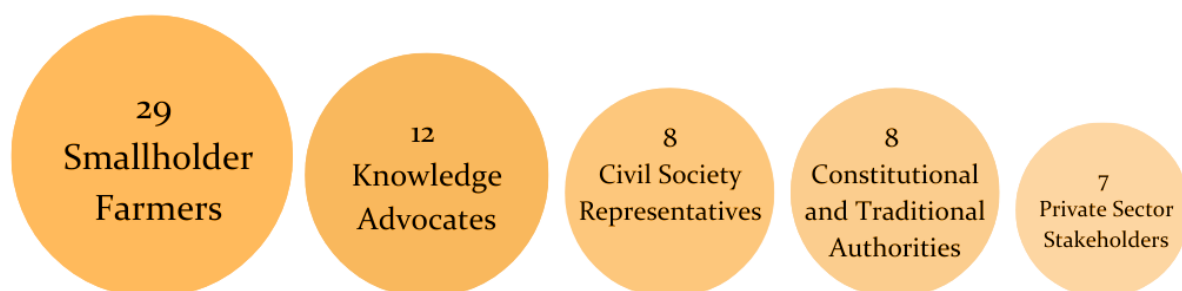
To capture the social nuances of the case study a predominantly qualitative research design was chosen. This research type connects well to the highly politicised context in which smallholder inclusion is embedded (Patton, 2002, p. 213). Although the study is mainly qualitative of character, quantitative materials were integrated to provide sense of scale and to nuance the descriptive data. The merger between both social and numerical data, has given the analysis a holistic character. Since the study aims at both making a contribution to sociological theory and illuminating a societal challenge, it falls between basic and applied research (Patton, 2002, pp. 215-217). These elements account for the book-like form in which this thesis is written. This format has been specifically chosen to present the case in its full complexity.

||| Research population and sampling methods

The research population for this study was extensive and represented a wide variety of stakeholders. In total, 97 individual stakeholders gave input for this study, of which 64 were interviewed formally. As visible in Figure 5 below, the research participants represented five stakeholder groups, respectively to their group size: (1) Smallholder Farmers, (2) Knowledge Advocates, (3) Civil Society Representatives, (4) Constitutional and traditional Authorities, and (5) Private Sector Stakeholders.

Figure 5

Schematic Representation of the Research Population



|| The Mpondoland cannabis farmers

The primary stakeholder group of this study consists of the Mpondoland cannabis farmers. Traditionally, these farmers are geographically concentrated in the Dagga Belt, consisting of the Eastern Cape and KwaZulu-Natal provinces. More specifically, within the Oliver R. Tambo and Alfred Nzo Regional Districts, the fifty-kilometre-wide land strip called ‘Mpondoland’, has the highest concentration of cannabis smallholders in the country (Clark, 2019a). It is even asserted that this area (highlighted in Figure 6 below) hosts the majority of cannabis smallholders in South Africa (Lewis, 2020). This is where most of the fieldwork took place.

Figure 6

Map of the Eastern Cape with the Mpondoland Region Highlighted



Note. Retrieved from Gray Simple Map of Eastern Cape, by Maphill, (2013), maphill.com/south-africa/eastern-cape/simple-maps/gray-map/

In almost all written sources and spoken discourse about cannabis in South Africa, the Mpondoland farmers are portrayed as one homogenous group (Clark, 2019a; Mason, 2020; Minister of Justice and Correctional Services, 2020; Ramashala et al., 2019). This undifferentiated representation does, however, not reflect the reality on the ground.

Since farmers groups deviate on many crucial points, their aspirations and needs are also incomparable, which has implications for a targeted policy reform. Therefore, this thesis advocates the subdivision of the Mpondoland smallholders in two groups: the *ancestral* and the *craft* farmers.

First, there is the group of ancestral cannabis farmers which consists of an estimated forty thousand farmers, chapter 2 will elaborate on this further. This group consists of farmers situated in the most remote mountainous areas around the Umzimvubu river system in Mpondoland. Mostly prevalent by the local municipalities of Ntabankulu, Ingquza Hill (particularly Mantlaneni and Flagstaff), Port Saint Johns and Nyandeni. Typically, these farmers have been growing the regional landrace variety their entire lives. Further they have passed the cultivation of the Mpondo landrace from parent to child for at least five generations (M. Madiba, Personal Communication, March 4, 2022). Contemporarily, this results in grandparents, their children, and grandchildren working simultaneously on the family fields. Although most family households have historically derived their income mainly from cannabis, their socio-economic status is among the lowest of the country (Bisht et al., 2014). This has forced farmers to gradually adapt an independent productive cycle, without the use of money, to ensure the survival of their livelihood. Since ancestral farmers are economically and politically the most marginalised, this study will exclusively focus on this group.

The second group of smallholders are the craft cannabis farmers. This group consists of mainly young farmers cultivating with imported cannabis seeds. The craft element in their practice refers to their intensive small-scale cultivation techniques which require advanced skills like proper drying, curing, and trimming. For this, basic technological tools, such as lights, fans and dehumidifiers are used. Many of these growers are children of ancestral farmers and have moved towards less mountainous areas on the edges of Mpondoland in recent years. Favourable climatological conditions, proximity to infrastructure and better access to markets result in a high concentration of craft farmers in the Eastern Cape's coastal area. The majority of craft farmers have started their own cultivation within the past five years, when cultivation for private purposes became legalised. With often multiple income streams, craft farmers are more economic

resilient than the ancestral farmers which explains the feedback loop of remittances towards the older generation of ancestral farmers. Even though this study does not elaborate on the specific conditions of craft farmers, they form a valuable research population for follow-up studies.

Focusing on the demographics of the ancestral farming household, it mostly consist of middle-aged women with a few children representing the Xhosa or Mpondo ethnic groups with 96% (Wazimap, 2016). Since no up-to-date census about the demographic constitution of the Mpondoland inhabitants is available, it is asserted that many men have permanently left the region in search of employment and many of them might have fallen victim to mine accidents (De Greef, 2016). Also, adolescent men turn out to be prone to leave the smaller villages in search of education and employment. Although literature supports the observation that most cannabis farmers in the region are women, this is not quantified properly (Clark, 2019a; Clarke & Riboulet-Zemouli, 2021; Jelsma et al., 2021).

Chain sampling was used to select the ancestral farmers within this geographical region. As selection criteria, farmers were required to work and live permanently in the Mpondoland area and being actively involved in cannabis cultivation or trade. The first farmers were identified through the Umzimvubu Farmers Support Network (UFSN), the non-governmental organisation best integrated into the ancestral farming communities. From there, recommendations of key informants facilitated further sampling. In collaboration with the UFSN, six farming communities were visited and later revisited³. During selection, the realistic representation of the gender balance among farmers was taken into account. A detailed and anonymised list of all interviewees is included in Appendix 2.

³ The names and locations of the communities visited are held anonymous because of the current illegal status of traditional cultivation.

|| The remaining stakeholders

To gather the research participants of the remaining stakeholder groups, initial purposive sampling and chain sampling were used. First, knowledge advocates were found in order to collect a holistic base of expertise around the South African cannabis industry. The diverse group of knowledge advocates introduced the perspectives of independent local experts, national and international researchers, attorneys, and education promoters. Some of these stakeholders were especially targeted for their working experience with smallholder farmers, but further a wide variety of contextual topics, such as insights on agronomy, history, and cannabis legislation, were covered.

Then secondly, representatives of constitutional government and traditional leadership were interviewed. The perspectives of both these groups were essential to understand the institutional context in which Mpondoland farmers are embedded. The interviews with members of government driving the implementation of cannabis policy were crucial to review the hampering processes of policy formation and implementation. The perspectives of the Eastern Cape Rural Development Agency (ECRDA) and Development Planning department of local municipalities were especially instructive to identify the communication gaps between government levels. The regional Chief of Mantlaneni was interviewed to assess the role of traditional leadership in smallholder inclusion.

Thirdly, members of civil society organisations were consulted for their critical perspective on the implementation of current cannabis legislation. Based on an extensive track records and advocacy work of the UFSN, Fields or Green for All, the Ntabankulu Farmers Association and the Afristar Foundation, the historic trajectories of marginalisation of cannabis farmers and their limited political representation became apparent.

Lastly, private sector stakeholders were included in the study to gain insight on the current status of the regulated cannabis industry in the medicinal, recreational, and industrial pathways. Further the experiences of Hemporium, House of Hemp, GESLabs and BioData were invaluable to assess the viability of the opportunities and impediments of future smallholder commercialisation. Importantly, Endalweni Trading

shared a detailed account on the experiences of the Eastern Cape Hemp Pilot Project Initiative (ECHPPI, from here onwards, hemp pilots). Lastly, private stakeholders allowed to explore an insider's perspective on urban based cannabis social clubs.

||| Research methods

In this study, a triangulation of three qualitative methods and one quantitative method is used to operationalise the research questions. As qualitative methods a literature and document review, open-ended interviews and participant observation were used. As quantitative methods, a household survey was conducted (Patton, 2002, p. 365).

|| Literature and document review

First, the literature review has formed the foundation for the problem statement and was used to operationalise the first and third research questions. A wide range of academic and grey literature has been used to approach the multisided problem of smallholder inclusion. Connecting to the width of this study, the literature covered a range of topics, among which most important, (1) global perspectives on cannabis, (2) the history of South African and its cannabis markets, (3) cannabis cultivation as rural subsistence farming, (4) judiciary and legislative processes, (5) farmers representation and cooperation and (6) theory-building. Starting at a critical juncture of the knowledge gaps, the academic literature was selected using the snowball method. The search terms used were *cannabis legalisation South Africa*, *smallholder cannabis farming*, *National Cannabis Master Plan*, *Dagga Belt*, *medicinal cannabis*, *hemp industry*, *recreational cannabis*, *Mpondoland cannabis farming*, and *farming cooperatives*.

In addition to the academic literature, accessed through the scientific search engines including WUR Library Search, Google Scholar and Scopus, also organisational documents were found and reviewed. Most importantly, the Master Plan⁴ was scrutinised to identify the political aspirations for the South African cannabis industry.

⁴ The fifth version of the Master Plan can be accessed through the following link:
<https://drive.google.com/drive/folders/1R7zxtUXR36pmYVR6TgdjwzuoDYggcuAL>

This analysis focused on the knowledge level, key values and practical strategies of the proposed cannabis policy. Further, a variety of other organisations publications were obtained through the research participants, and used to understand the legislative process of the past years. The most important publicly available documents were: (1) the latest revisions of the Cannabis for Private Purposes Bill, (2) the written accounts of judgements of the Constitutional Court, (3) official cannabis cultivation licences, and (4) the Full Spectrum Manifesto of Fields of Green for All. The most important unpublished documents were: (1) Strategy documents of the ECRDA (2) the Feasibility Study of Development Planning of Ntabankulu local municipality, and (3) Qure's test results of landrace products. These documents were selected through the exploratory study or through the research participants.

As a critical note on this research method, little specific academic literature on the case study was available due to the novel character of legal cannabis and the past criminalisation of cannabis stakeholders. The shortage of scientific studies raised the reliance on non-academic sources and organisational publications. Generally these sources had a less formalised and more politicised contents which had to be compensated for with more written sources. Also, the available literature was often not context-specific enough. Publications on the South African Cannabis industry rarely focused on the Mpondoland region or omitted important nuances on varying farming styles.

|| Open-ended interviews

As the second qualitative method during fieldwork, open-ended interviews were used in the operationalisation of all five research questions. For each stakeholder group, an interview guide was provided with context-specific questions which allowed for an intuitive exploration of relevant topics (see Appendix 2). This room for improvisation connected well to the flexible character of the constructivist Grounded Theory (Glaser & Holton, 2004). The flexibility of the interview guides resulted in audio-recorded interview lengths varying from 30 to 210 minutes.

The members of farming communities in Mpondoland were the most important stakeholder group, and thus the 29 farmers selected were thus interviewed first. Fifteen of the participants were female farmers and the remaining fourteen were male farmers. A wide age distribution of three generations was represented with the youngest farmer being sixteen years old and the oldest 73 years old. The semi-structured conversations connected well to the exploration of the diverse practices and aspirations of farming livelihoods. In total, six farming communities in Mpondoland were visited to which the access and the local network was provided by the UFSN. Often, on arrival a meeting was called by the sub-headman of the village to introduce the research team and to invite farmers for their participation. Participating in these meetings built rapport. While having anticipated a taboo on talking about illegal cannabis, farmers were eager to share their experiences and concerns. Given the communal mode of living in rural communities, some interviews were conducted in small groups with a maximum of four farmers.

The main limitation to the interviews with the ancestral farmers was the language barrier. In most communities, isiXhosa was spoken by the farmers and thus all interviews were accompanied by the interpreters of the UFSN: Greek Zweni and Mfanekiso Bonke. Remarkably, the interpreters adapted the formulations of interview questions to the context-specific terminology and understanding. Besides the impact on time, the mutual translation process might have affected the interpretation of farmers' accounts. Especially, the many poetic expressions in local language made follow-up questions and explanations of the local customs necessary. The triangulation of multiple farmers' accounts has levelled out these discrepancies.

The interviews conducted with the remaining stakeholder groups informed the in-depth exploration of expertise as outlined above. In this category, 35 different stakeholders were interviewed, of which eleven were held online or by phone. The remaining 24 interviews were done on a locality of their choice in the Western Cape and Eastern Cape. Notably, because many ancestral farmers were inherently hesitant about government interference, official authorities were interviewed after the visits to the

rural areas were concluded. A detailed list of all research interviewees is found in Appendix 1.

|| Participant observation

As the third qualitative research method, participant observation was used to operationalise the second and fourth research question. The method was used in various localities and settings across the South African cannabis industry, of which the most important: (1) participating in the ancestral and craft cultivation process, (2) attending a traditional ceremony, (3) participating in the Cannabis Expo in Cape Town, (4) participating in the East Coast Cannabis Cup & Expo 2022, and (5) visiting urban based cannabis companies and social clubs in Cape Town. This wide range of activities has yielded an in-depth understanding of the unequal access and representation of rural versus urban stakeholders in the cannabis industry. Also, the large divide between the political ambition on cannabis and the widespread stagnation of the industry became apparent.

Of particular importance were the participant observations done among the ancestral farming communities in Mpondoland. On these visits, farmers arranged accommodation for us in their homes and the interpreters facilitated the informal interaction outside the interviews. The method of participant observation was chosen for this context to experience first-hand the activities that constitute the traditional cultivation practices. Passive observations were made in all farming communities and in three of them, participation in the trimming, cleaning, and drying process were done. Briefly living and working among the farmers revealed the harsh consequences of waning living standards (e.g. living on two meals daily) and showed the major gap between the traditional cultivation compared to the many requirements to fit the current regulations.

Gaining sufficient trust with the rural communities was the challenge for using the participation method effectively. Due to the UFSN this was achieved more quickly than expected. The hospitality of the farming households was heart-warming and participation in the mundane activities of working, drinking, and eating during the

homestay made the fieldwork deeply meaningful. This dynamic connected well to Charmaz's (2006) constructivist notion that participants and researcher jointly create meaning. Rather than marking this as a limitation, it must be viewed as a methodological contribution of the emic perspective praised in the ethnographic research approach (Scoones, 2015, pp. 19-25).

|| The household survey and production measurement

Finally, a quantitative household survey and a production measurement were conducted to operationalise the fourth research question. The idea to conduct a survey emerged spontaneously during fieldwork when it became apparent that the size of cannabis production in Mpondoland had never been quantified before. Even estimations about the magnitude of past or future production have never been published. Since multiple stakeholders, including government officials, regarded the collection of basic data highly valuable, the survey was integrated into this study. Later during the fieldwork period, the survey data was complemented with more detailed measurements. As its major contributions, these methods have laid the foundation for the quantification of smallholder production in Mpondoland and formed the building blocks to determine the economic potential and viability of alternative livelihood strategies within the three cannabis pathways.

The household survey was executed in two distinct farming communities consisting of 55 cannabis households, of which 30 ancestral farmers participated in the survey. With the help of the UFSN, who provided swift access to the communities, a broad coverage of farmers was realised by walking through the village and inviting as much farmers as possible for their participation. Most farmers were visited at their homestead and were asked to share information about (1) their current cannabis storage, (2) current prices of cannabis, (3) the size of their cannabis fields, and (4) their interaction with their last customers. An overview of the questions is found in Appendix 3.

To expand the quantification of production beyond the community level, the survey data was later combined with a wider range of collected data. Namely, (1) cannabis fields measurement through aerial photos of Google Earth, (2) the UFSN's estimations on the

minimum and maximum boundaries of the total number of ancestral farmers in Mpondoland, (3) the current market value of medicinal, industrial, and recreational products, and (4) carbon sequestration data. As a last set of data points to specify the landrace's potential for industrial purposes, a manual field measurement was done on (1) plant density per m², (2) stalk sizes and quantities, and (3) the potential hurd production. The combination and extrapolation of these data points have yielded a detailed overview of the aggregated production capacity and monetary value of landrace cannabis in Mpondoland. A full overview of all data is found in Appendix 2.

There are a few important limitations to the quantitative data collected. Firstly, since this study did not anticipate the collection of numerical data, from a wide variety of sources data had to be combined. This has potentially increased the margins of error, since some data is under debate. In the case of the absence of quantitative proof on, for example, the unknown total number of ancestral farmers in Mpondoland, the extrapolations based on these estimates must therefore be used with caution. Fortunately, since debatable estimations were used consistently, the relative position between data points remains valid. As a second limiting factor, the extrapolations on production and value have taken into account data points that are subject to continuous change. This applies for example to prices of cannabis products and customer demand. These uncertainties have implications for the use of the quantitative data underlying the analysis. In this light, the calculations of this study can be viewed as a first approximation towards a quantitative substantiation of the smallholder cannabis economy in Mpondoland.

||| Data analysis

In accordance with the methods prescribed by Grounded Theory (Charmaz, 2006), data collection and processing were an iterative process during this study. After each interview, important observations were written down and a brief reflection was done to improve the setup for the next interview. With permission of the interviewee, the interview was audio recorded and later digitally transcribed with the software tool Trint. The recording of thematic memos was used to timely structure the data and facilitating further theoretical sampling. Similarly, memos were recorded after each participant

observation session to document important observations. When the fieldwork was concluded, the merger of interview transcripts, field memos, literature review and the household survey data produced an extensive dataset consisting of 340 full pages of written text. Since all this data was analysed and categorised into initial and axial codes in Microsoft Excel, this process was rather time-consuming. Nevertheless, as the Grounded Theory methods suggests, the full comparison of all data has largely led to theoretical saturation.

||| **Research ethics**

In preparation of the engagement with the research participants, the American Anthropological Association guidelines (2012) were followed. This was especially relevant since the fieldwork involved cannabis stakeholders engaged in illegal activities. A further reflection on the ethical guidelines used is found in Appendix 5.

|| **Positionality**

One of the consideration within research ethics, particularly relevant to the constructivist research school, has been the positionality of the researcher. Positionality describes how the social identity of the researcher might have influenced the research in general, and more specifically, shaped the engagement with the research participants (Patton, 2002, pp. 101, 267-268). Elements constituting my identity in the field were my sex, gender, age, ethnicity, nationality, cultural background, educational background, appearance, spiritual background, and socio-economic status. During fieldwork in Mpondoland I was dominantly viewed as the tall Western European white male, of 27 years old, executing the role of an external researcher in the Mpondoland context.

These elements resulted in inherent mutual biases in the engagement with the research population. Prevalently, in my role as a researcher, I experienced a rather hierarchical and privileged position compared to the rural farming communities. Farmers were often eager to share their stories with me because I, as a white outsider, would possibly have financial means and political access to change their economic hardship. Nevertheless, despite this focus on the economic discrepancies between me and the research participants, ethnic or cultural antagonisms only impeded the study marginally.

Importantly, an equal representation of female and male farmers of multiple generations was also taken to minimise the impact of gender- or generation-biases.

Other inherent biases from my cultural background were language, social norms, style of reasoning and spiritual background. For example, my European social norms of individualism and autonomy were partly contradicting the collectivist values of the rural households. Illustratively, interviews often took place outside in public spaces which resulted in various group interviews. During data collection I tried to practice cultural sensitivity by listening to the participants, making as few assumptions as possible and cultivating knowledge about the Xhosa and Mpondo cultures. The mastering of basic words and phrases in isiXhosa helped immensely to increase my acceptance among the farmers.

||| **Research limitations**

This study has three sets of limitations, namely, concerning the research population, the incongruencies in legislation, and the weight of various arguments. These limitations stem from methodological choices, restraints of time and scope, and gaps between theory and empirical reality. Rather than weakening the study's findings, these factors provide valuable starting points for further research.

|| **On the research population**

First, there are clear methodological limitations to the specific focus on the ancestral landrace farmers in Mpondoland. Although the demarcation of the research population promotes the accurateness of the findings, representing the full diversity of cannabis smallholders in South Africa goes beyond the scope of this study. For example, although Mpondoland is generally regarded as the dominant poverty-stricken area and that thus Xhosa and Mpondo smallholders earn specific attention, there are also large populations of ancestral cannabis farmers in other provinces and other ethnic communities. Groups that are not discussed in this study are the ancestral farmers from the Zulu, Pedi, Swazi, Sotho and Koi-San traditions in KwaZulu Natal, Mpumalanga and Free State. While to a certain extent generalisations from the Mpondoland area are

possible, more specific research on other cases is required to advance smallholder commercialisation effectively.

Secondly, a further limitation to the research population is found with regards to the position of craft farmers in Mpondoland. Within the search for commercialisation strategies, this group deserves special consideration, but this transcends the boundaries of this project. As briefly mentioned in the methodology section, craft farmers are dispersed across the Eastern Cape and find themselves in a more economic resilient position, compared to ancestral farmers. However, since they have a unique set of needs to commercialise their products, findings of this study cannot be directly applied to them.

Thirdly, this study only touches lightly on a gendered perspective on the cannabis cultivation by female farmers in Mpondoland. Given the interplay between female farmers' reproductive tasks additional to their labour in cannabis production, it can be expected that suitable livelihood strategies towards commercialisation are also gender-specific. Since this study largely omits these nuances, the subject merits more elaboration in a follow-up study.

|| On the incongruencies in legislation

A next set of limitations concerns the discussion about the legislative process of cannabis liberalisation in South Africa. Firstly, little consideration is given to the international regulatory frameworks controlling and regulating illegal substances. This can be seen as a limitation because South African smallholders would for example benefit from reclassifying their landrace as a type of industrial cannabis, for which an exception to the international regulatory regime must be taken. Although currently other governments are confronting the shortcomings of the United Nations' Single Convention on Narcotic Drugs, the extent to which this sets a precedent for the South African government to alter legislation is not discussed in this study. A more thorough exploration of this topic would also take into account the international frameworks in place to promote smallholder cannabis commercialisation.

A second limitation in this category, is the under-representation of the legislative process of anti-cannabis sentiments among policymakers. This under-representation is caused by the closed nature of policy formation processes and the inaccessibility of these stakeholders in high political ranks. Nevertheless, research participants across the industry argue that politically powerful officials with conservative stances on cannabis, delay policy revision and its implementation. A better representation of the procedural steps and these critical voices would provide a valuable starting point for further research. This could yield a more balanced understanding of the impasse in policy formation and how the aims of the Master Plan can be practically implemented.

Thirdly, the provision of finances for smallholder support systems is not discussed. Although it becomes clear that government budgets are insufficient to independently incentivise smallholder, alternative funding methods go beyond this thesis. However, in light of a possible pilot project and its subsequent implementation, such an analysis is essential. Future research could therefore review taxation systems, micro-finance schemes through the Micro Agricultural Financial Institutions of South Africa (MAFISA), targeted corporate investment and the role of banks in financing communal tenure.

|| On the infant industry

The last set of limitations stems from the novelty character of the cannabis industry. This specifically applies to the political vision of smallholder commercialisation, and its implementation strategies. During the interviews it was difficult for ancestral farmers to think about income generation besides landrace cultivation since alternatives do not yet exist in reality. This presents a problem because the scope of this study does not allow it to conclude on the economic viability of future cannabis markets identified. This limitation thus stems from the early timing of this research. Illustratively, most farmers are moderately positive about the introduction of cannabis tourism, but rightfully state that the value of tourism could only be determined after its introduction. Since the formalisation of smallholder inclusion is still in progress, and the legal framework is not yet completed, the farmer' economic futures remain highly speculative.

As a last limitation regarding scenarios for commercialisation, a gross simplification of cannabis markets and products is used. This is mainly done to showcase which product would be most suitable for a first smallholder pilot project. Nevertheless, the livelihood strategies discussed only represent the tip of the iceberg and a wider range of commercialisation possibilities exists. In essence this limited scope of the study can be interpreted positively since a wide range of applications is thus still unexplored. More detailed product research would be needed to get a better grasp on which quality products can be made from the Mpondo landrace.



Chapter 1.

Introduction to the South African cannabis industry

||| Introduction

In order to understand the contemporary context in which commercialisation of cannabis smallholders will be integrated, this chapter introduces its broad historical embedding and the current status of the legal framework. Therewith it sets the economic and institutional macro context in which the ancestral farmers' livelihoods are embedded. The research question structuring the chapter is: *What is the historical background and current legislative status of the South African cannabis industry?*

The chapter starts with a broad historic overview of South African cannabis markets to review the colonial foundations of the twentieth-century cannabis prohibition. Then the text tapers toward the smallholder market in Mpondoland and shows which legal framework is offered by the National Cannabis Master Plan. The chapter ends by showing the factors causing exclusionary character of the contemporary cannabis legislation for smallholder farmers.

||| The cannabis history of South Africa

The interaction between humans and cannabis goes at least back to 8000 BCE. Originating from Central Asia, the plant made its early way to Africa and the continent's native populations adopted thriving cannabis economies (Duvall, 2019). Since during most of Africa's history, cannabis production for recreational and spiritual use were allowed by local authorities, the plant became engrained in a wide range of African traditions (Paterson, 2009). In South Africa it can be asserted that at least the ethnic groups the Khoikhoi, the San, the Swazi, the Sotho, the Pedi, the Nama, the Zulu, the Xhosa and the Mpondo were involved in early cannabis cultivation, use or trade (Paterson, 2009; T. Kunene, Personal Communication, May 12, 2022). Based on eighteenth century ethnographic reports, it can be asserted that until the European colonial era, Southern African cannabis cultivation exclusively thrived on local and region markets.

From 1800 onwards, under colonial involvement of the ruling-class in South Africa increasingly a discourse of racially-based moral condemnations of cannabis was introduced. This dynamic fit within the wider context of ethnic tensions between settling westerners and native populations can be seen as a precursor of the twentieth century rationale of Apartheid (Paterson, 2009). Similar to the British experience in India with the cannabis use of indentured labourers, the plant became increasingly used as an instrument to socially discriminate between the morally superior white population and the inferior black and coloured populations (Duvall, 2016). Subsequently, this sentiment was strengthened by various authorities of which the Indian Immigrants Commission (IIC) claimed that cannabis consumption impacted labourers' strength, inducing indolence, diminishing their manhood, inducing aggressive behaviour, and leading to insanities (Paterson, 2009, p. 44). In tandem, criminologists warned that the cannabis use of the 'savage' black population would affect the 'civilised' white layers of society. In retrospect, the IIC's mandate to '*make natives more useful to the white community*' reveals the deep rationales of economic exploitation this disenfranchisement campaign.

At the close of the nineteenth century, the campaign already led to legislative changes and in 1922 the government of the Union of South Africa prohibited the cultivation, sale, possession and use of cannabis under the Customs and Excise Duties Amendment Act (Duvall, 2016; Lakčević, 2016; Paterson, 2009, p. 47). As an important next step, in 1923 government urged the League of Nations' Advisory Committee on the Traffic in Opium and Dangerous Drugs to also include cannabis in the international list of habit-forming drugs which led to its global prohibition in 1925. This trend indicates that the prohibition of cannabis became a means to suppress social classes worldwide, which is explanatory for why contemporary cannabis prohibition is often framed as a remainder of past colonial times (Shelly & Howell, 2019).

Despite prohibition, the South African cannabis market experienced significant expansion after World War II (Paterson, 2009). It is estimated that at the time, already 9% of rural South Africans were engaged in illegal cannabis production in which Mpondoland stood central (Bloomer, 2019, p. 3). As a former part of the British colony

Natal, under Bantustan policies in the 1950s, the Mpondoland region became part of the Transkei, a self-governing homeland outside the formal control of national government. With the region's violent political history the conditions were created for the concentrated settlement of cannabis smallholders (Sahistory, n.d.). Through a combination of forced dispossession and voluntary settlement, black minorities became concentrated in the Mpondoland region. Given the lower economic status of the Transkei, Mpondoland increasingly obtained an isolated character with only marginal economic activity crossing its borders. This drove a large share of its population towards subsistence farming and thus to home-growing most of the food consumed. The favourable environmental conditions, the abundance of communal land (see Image 1 below), the low investments required for and the relatively high profits of rural-urban trade gradually strengthened farmers' economic dependence on outdoor landrace cultivation (Bloomer, 2019; Kepe, 2003; Lewis, 2020).

Image 1



An Overview of the Closely Adjacent Cannabis Fields in Mpondoland. Footage of Simon Sperring, (September 2021)

From this period onwards mountainous terrain of Mpondoland provided farmers with a natural protective barrier to employ cannabis to raise their living standard

independently from government support (Du Toit, 1976, 2011; Lakčević, 2016). This had many positive consequences for the rural economy. Firstly, cannabis cultivation offered an alternative to the hardship of mining to which many others were forced. Secondly, most of Mpondoland's traditional homesteads from where cannabis was sold were built in this era, and they were financed with cannabis money (see Image 2 below). Lastly, with tacet consent from non-cannabis farmers, a simple system of customers referencing to neighbours and family members ensured a relatively equal sales between farmers and promoted a certain level of wealth distribution within the community (U. Jabavu, Personal Communication, May 8, 2022). This allowed youth to attend primary education and, in some cases, even higher education. Additionally, cannabis incomes even paid for the English education of teachers, which improved the quality of regional education.

Images 2



The Traditional Homesteads in Mpondoland. Footage of Simon Sperring, (May 2022)

Despite the strong positive impact on the rural economy in Mpondoland, the ancestral farmers simultaneously suffered from fierce criminalisation (Lakčević, 2016). From the 1950s onwards, the prohibition of cannabis was taken extremely serious by law enforcement and led to far-reaching attempts to ban its outdoor cultivation (Duvall,

2019; Lewis, 2020; Nkosi, 2021). Although discussions on the plant's negative impact became slightly more nuanced throughout this period, the political strategies retained their inherent racist dynamic (Paterson, 2009). Because most repressive strategies for the so-called '*dagga problem*' turned out to be ineffective, ever- stricter enforcement was introduced. Mainly targeting the areas where cannabis cultivation was most concentrated, mobile police squads were confiscating vehicles, suspending drivers-licences, strictly controlling trade routes with police dogs, fingerprinting offenders and carrying on a large scale propaganda campaign and conducting massive crop eradication. Whereas until the 1970s the crop eradication was done by burning cannabis harvests, this was gradually transitioned to the aggressive strategy of annual helicopter spraying with the carcinogenic glyphosate during the 1990s. Besides the killing of vegetable plants, this affected the livestock's and human health negatively (Clark, 2019a; De Greef, 2016). By portraying cannabis farmers as rich and seasoned criminals, these racially marginalising eradication campaigns were maintained until 2016 when under pressure of civil society and the World Health Organisation the sprayings were stopped (T. Kepe, personal communication, November 25, 2021). Remarkably, despite these aggressive methods, the total size of illegal markets for cannabis has structurally grown until at least 2003.

From the 1970s onwards, the international sentiment on the War on Drugs slowly started to shift (Howell, 2016; Lakčević, 2016). Economic and political factors at the close of the twentieth century led to growing critique on its effects. For example, the continuous eradication and prevention became an increasing financial burden on governments' spending (Nutt, 2016; Piaggio, 2019). Remarkably, the costs of enforcing drug prohibition in the United States amounted to about US\$ 47 billion annually (Drug Policy Alliance, 2022). Although South African data is scarce, Van Kerken (2016, p. 8) estimated that the government spent up to R3.5 billion annually (US\$ 190.7 million) on prohibition. Further, the scant evidence of the effectiveness of enforcement and overcrowded prisons also fuelled the change of discourse and strategy (Howell, 2016). Lastly, scientists pointed out that through prohibition the large potential of the wide range of industrial products was lost and that the plant's excellent carbon sequestration property could be exploited considering sustainable development (Budden, 2016; Lakčević, 2016).

As a consequence, various countries began to revise their national drug policy frameworks towards a less prohibitionist stance and reduced oppressive law enforcement strategies. Pioneering governments of the Netherlands, Canada and Uruguay decriminalised their cannabis sectors through creative policies condoning the use, trade and cultivation of cannabis. Already in 1999 South Africa joined this progressive movement and launched the Eastern Cape Hemp Pilot Project Initiatives to investigate the industrial potential of cannabis.

||| **The contemporary South African cannabis legislation**

The decriminalisation and industrialisation of cannabis are laborious processes which have only recently taken shape in South African. Where globally the Sustainable Development Goals agenda is proposed as a framework to realise this transformation, the South African government has not yet outlined the principles on which their legal framework is built (Health Poverty Action, 2015; Riboulet-Zemouli, 2021; Riboulet-Zemouli, Anderfuhren-Biget, Velásquez, Krawitz, 2018; The Constitutional Court of South Africa, 2018). Thus far policymakers have conveyed a rather confused and hesitant impression on the legal approach. Illustratively, the first attempts to draft coherent cannabis legislation was only initiated after the Constitutional Court legally coerced parliament to mend legal incongruence in 2018. In balancing an enabling cannabis environment for all stakeholders and the prevention of potential societal harms, the national government seem to have only just begun to discover the nuances of inclusive cannabis legalisation. A clear example of such complexity is that the paradigm shift towards legal cannabis does not only require a change in political values, discourses and introduction of new bureaucratic procedures, but it also requires the transformation of existent institutions formerly suppressing the industry. Especially, changing the law enforcement agencies in their prohibitionist philosophy and strategies turns out to be a difficult task (K. Riboulet-Zemouli, Personal Communication, May 13, 2022). Furthermore, international precedents have shown that changes in cannabis legislation do not automatically lead to betterment of economic of legacy farmers (New Frontier Data, 2021). Illustratively, the illegal market of cannabis in Canada remained highly competitive while legislative changes were introduced. In order to review how the South

African government aims to address and circumvent these hurdles, the 2021 Master Plan is scrutinised.

|| The National Cannabis Master Plan

In March 2021 the South African government issued the fifth draft of the Master Plan. The mandate to its drafting was initiated by the 2018 verdict of the South African Constitutional Court stating that a coherent policy framework for cannabis commercialisation was required in response to the legality of adult cannabis consumption in private spaces (The Constitutional Court of South Africa, 2018). In 2019 also the Re-imagined Industrial Strategy (RIS) stressed that similar to other industries, cannabis policy must be based on a central plan reflecting the political values, objectives, strategies and role division concerning the plant. In this vein, the Master Plan has become the first attempt to formulate a strategy document for industrialisation.

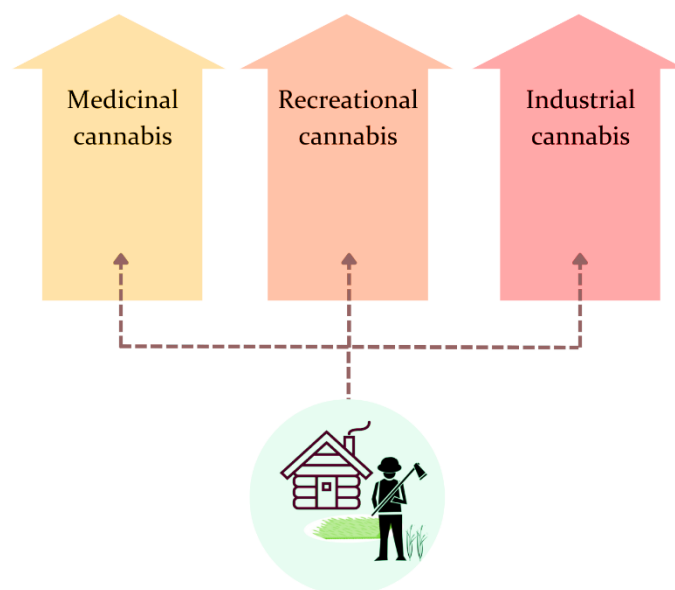
Where normally industry stakeholders would lead a formation process, in the case of cannabis, a large consortium of stakeholders collaborated to draft the document. There were seven primary stakeholders, among which the most important (1) an inter-ministerial cannabis team (representing the departments of Agriculture, Land Reform, Trade and Industry, and Justice and Small Business Development), (2) The South African Police Service (SAPS), (3) private sector working groups, and (4) members of the Tripartite Alliance African National Congress (ANC). Notably, cannabis smallholders were not represented in these stakeholder groups.

The main motivations taken for the policy document were cannabis' multi-variate potentials of economic growth, product development, medical applications and harm reduction (Ramashala et al., 2021, p. 4). Following from this, the four main goals of the Master Plan are to employ cannabis for (1) economic development, (2) the creation of jobs, (3) inclusive participation and rural development, and (4) poverty alleviation (Ramashala et al., 2021, pp. 4-5). Subsequently, these goals are specified in seven objectives with the stakeholders responsible assigned to them.

In the attempt to simplify the regulation of cannabis, the industry is structured into four pathways. These cannabis pathways represent distinct cannabis sectors with a specific set of characteristics to which a unique set of regulations applies. The four pathways are: (1) Medicinal cannabis, (2) Recreational Cannabis (3) Industrial Cannabis, and (4) Cannabis Food and beverages⁵ (see Figure 7 below). In relation to the commercialisation of cannabis, these pathways can also be framed as entry points to alternative livelihood strategies. In order to realise these cannabis pathways, nine broad pillars are identified to execute strategic interventions. The recommendations coming out of this study mainly relate to pillars 1, 4, 5 and 9 which are (1) effective regulatory systems, (4) producer support systems, (5) market development, and (9) communication and awareness.

Figure 7

Schematic representation of the three cannabis pathways as alternative livelihood strategies



5 Given the low psychoactive compounds in both cannabis for industrial products and in food and beverages, this thesis treats these two pathways both under Industrial cannabis.

Although the Master Plan states that inclusion of marginalised smallholder cannabis farmers in these cannabis pathways is important (especially under pillar 4), it eludes the crucial question of how their cultivation practices relate to them. Nor does the plan provide any insights in which of the pathways smallholders are expected to be most successful, for which the required formal registration of the Mpondo landrace is currently still impossible. Also, regarding the guidelines on how to consult with the large group of smallholders and the design of appropriate support systems, the Master Plan is not instructive. In order to answer some of these questions, state-of-the-art knowledge about the three cannabis pathways is presented.

| Medicinal Cannabis

Since time immemorial cannabis is being used for its medicinal properties but, only recently the industry is regulated through a legal framework. Despite the limited clinical research on cannabis as medicine, a growing body of evidence supports its medicinal application worldwide. Illustratively, the American and European health systems have already integrated the plant into chemotherapy treatments as nausea- and vomiting-remitters (Ng & Chang, 2022; Ramashala et al., 2021). Also, the plant is used to improve the appetite of HIV/AIDS patients, to reduce chronic pain and to control severe forms of epilepsy. Lastly, increasingly research is done on cannabis' therapeutic effects on an array of diseases, among which multiple sclerosis and Huntington's disease (Abrams, 2017; Nutt, 2016).

The South African authorities are catching up with the western application of cannabis medicine. As a first step, recently indoor-controlled and clinically tested cannabis was classified as a Schedule 6⁶ substance which has allowed physicians to legally prescribe cannabis medicine (Ramashala et al., 2019; SAPHRA, 2019). In spite of this success, current legislation only allows domestically produced cannabis medicine to be exported internationally. Despite the fact that national and international pharmaceutical

⁶ Schedule 6 medicines are moderately to highly addictive. Consequently, these drugs aren't available on repeat prescriptions and their dispensing is limited to a 30-day supply at the most (Alliance MIDMED, n.d., p. 2)

producers can thus profit economically from this pathway, the national population does not yet benefit from South African medicine.

Cannabis as a medicine obviously requires a legislative framework. The licences for safe and effective cannabis medicine are exclusively issued by the South African Health Products Regulatory Authority (SAPHRA). Bound to the International Narcotics Control Board (INCB), the agency follows the guiding principles of the 1961 United Nations Single Convention on Narcotic Drugs (United Nations, 1961). Private stakeholders can obtain licences and permits for cultivation, extraction, possession, research, developing, patenting, exporting and importing cannabis medicine as defined in section 22C of the Medicines and Related Substances Amendment Act. Since, South Africa does not have a national framework of quality standards for cannabis medicines, the European Union standards of Good Manufacturing Practices (EU GMP) are integrated into the Medicines and Related Substances Act of 1965 (Act 101) mandated by the Department of Health.

As an important characteristic, the medicinal sector has high financial, bureaucratic and geographic barriers to entry. This leads to dominantly capital-intensive having access and capital-poor stakeholders, especially rurally based smallholders being excluded (Duvall, 2019). The Master Plan states that *‘the South African medicinal sector fits within the global trend wherein small-, medium- and large-sized cannabis businesses will be acquired by bigger companies unless they develop a dedicated target market. It will be important for government to use competition laws to deal with this challenge to create an inclusive cannabis industry’* (Ramashala et al., 2021, p. 21). At the moment of writing, eighty medicinal companies were licenced, which required large capital investments (SAPHRA, 2022a). Exemplary, the pharmaceutical company Labat Africa spent, additionally to their SAPHRA licence, about R10 million to obtain and register their first cannabis-based medicine (S. Gallow, Personal Communication, April 19, 2022). Besides financial, also a strong geographical division between economic centres and hinterlands is observed. Out of the eighty medicinal companies, only five are based in the Eastern Cape, where a possible collaborative scheme with the Mpondoland smallholders would be imaginable.

Despite the dominance of capital-intensive conglomerates, it would be a mistake to conclude that the South African medicinal cannabis sector is thriving. In fact, only very few medicinal companies have yet realised a profitable development and export of medicine. Rather, industry insiders assert that most companies are still battling to break even or to prevent a severe loss of investments. This economic fragility is largely explained by limited international offtake, international competition, the restriction on domestic offtake, high production standards required in foreign markets, lengthy processes of product development and registration. Given these factors, it is expected that the size of the medicinal market needs to double, or even triple, to support the long-term investment roadmap of a lucky few companies. Besides that the rapid surge of medicinal companies is expected to cause bankruptcies, it can be expected that a large quantity of domestically produced surplus cannabis will find its way into the illegal market in South Africa (S. Sperring, Personal Communication, April 20, 2022). These insights illustrate that medicinal companies are caught in a highly competitive market and that they are, through the financial squeeze, prepared to defend their beneficial market position. Integrating smallholder farmers independently in this free-market dynamic is clearly not straightforward and possibly even undesirable due to the large gap with the subsistence mode of farming.

Nevertheless, the medicinal cannabis sector reaches beyond the boundaries of formalised medicine, which creates an opening for smallholder inclusion into this pathway. Namely, the use of cannabis as self-medication is widespread in South Africa. Especially, in informal settings cannabis is used for its general beneficial properties for human health, which is often referred to as '*medical*' cannabis. This specific market segment is also seen in other cannabis economies, such as in the Netherlands, where 97.5% of cannabis-using patients source their plants via the recreational circuit (Nationale Drugs Monitor, 2022). In the South African context, unregulated medical cannabis is often applied as traditional medicine by traditional health practitioners (sangomas). Since recently certain categories of cannabis medicine became acknowledged as complementary medicine (Schedule o, category D), not all medical cannabis is submissive to the strict regime of quality control and clinical research

(SAPHRA, 2022b). To which degree this legal exception impacts smallholder inclusion in the medicinal pathways will be reviewed in chapter 4.

| Recreational Cannabis

As the second cannabis pathway, it can be employed for recreational use. As mentioned, its use for the calming and stimulating effects has traditionally been widespread in South Africa and until today remains popular across its many national cultures and geographies. In 2009, the country was ranked as the third-largest global producer of cannabis (Lakčević, 2016, p. 9). Although accurate estimates about the total production are rare, the total cultivation area between 1992 and 1995 grew a sevenfold from 12,000 to almost 83,000 hectares (Paterson, 2009, pp. 6-7). This quantification however does not shed light on the share of smallholder cannabis, since no distinction is made between ancestral and craft farmer production. Nonetheless, it is estimated that South Africa has between 3.5 and 4 million recreational users, which is +/- 10% of the adult population (Ramashala, et al., 2021, p. 14). This is a considerable user base compared to the average user base in other countries where cannabis laws have historically been relaxed (Trimbos-instituut, 2022). The customer demand for more potent cannabis strains, which are often legally imported from Europe, has also become dominant in South Africa in the last two decades. As will become apparent later, this trend is important to recognise since this makes inclusion of landrace cultivating smallholders challenging.

Contrary to the medical and industrial sector, no legal framework yet exists for the commercialisation of recreational cannabis. Even though the drafting of a regulatory framework is in progress, this currently represents the most pressing legislative void impeding the recreational legal market from developing further. The first attempt to formulate a coherent framework for commercialisation was the 2021 amendment to the Cannabis for Private Purposes bill (Minister of Justice and Correctional Services, 2022). Legal experts however critically concluded that guidelines for commercialisation would require a separate comprehensive piece of legislation instead of being an addition to the framework for cannabis use (R. Stone, Personal Communication, May 14, 2022).

Illustrative for the challenge to regulate the recreational market, the issuance of the Cannabis for Private Purposes bill, only allowing cultivation, possession and consumption in private spaces, has led to a surge of cannabis social clubs. While smokable cannabis flower is still the most common form to induce the calming effects, a wide range of new products like extracts, oils and edibles have entered the South African market in the past years. Despite the club's popularity and potential as legal outlets for these products, on August 31st, 2022 the High Court rendered all clubs illegal and demanded their immediate closure (The Regional Magistrate of Wynberg, 2021). This interaction between progressive free-market stakeholders and volatile regulations is illustrative for the current status of recreational cannabis policy wherein the economic reality has clearly overtaken the legal progress. It is therefore unsurprising that the promising political discourse about the opening of the recreational pathway has tempted stakeholders to invest and pursue with unlicensed forms of cannabis commercialisation.

There are three main factors hampering the formation and implementation of the regulatory framework for smallholder recreational cannabis. First, there is a debate as to on what basis citizens are allowed to commercialise cannabis. Most recently, the amendment to the Private Purposes bill proposed to acknowledge the membership of cultural or religious communities as a valid reason to obtain cultivation permits (Minister of Justice and Correctional Services, 2022). This implied that the right to commercialisation of recreational cannabis would be tied to cultural and religious backgrounds of stakeholders. However, these statements were met with substantial critique on their arbitrary and exclusionary character.

As a second challenge, the confrontation between formerly illegal producers and legal home-growing newcomers, complicate streamlining this pathway. Partly due to the recent legalisation of private cultivation, there is an abundance of good quality cannabis available in South Africa. While cheap surplus production is continuously funnelled into the illegal circuit, future legal producers will have difficulty regaining their investments (J. Hursh, Personal Communication, April 19, 2022).

Thirdly, the implementation and control of any regulatory framework for recreational cannabis is highly challenging. The Portfolio Committee on Justice and Correctional Services acknowledged that the distinction of different types of cannabis and their cannabinoid content is difficult to determine and thus almost unenforceable (Parliament of the Republic of South Africa, 2022).

Despite this regulatory stagnation, the long-term functioning of the illegal recreational market also ensures its latent economic activity today. While not applicable to smallholders, urban based cannabis trade is thriving nowadays. Thus, whereas despite their coherent legal frameworks the medicinal sector and as follows later also the industrial sector, stagnate, the recreational market, notwithstanding the absence of legislation, is relatively thriving. Nevertheless, where urban based cannabis entrepreneurs structured supply via the cannabis clubs, the ancestral smallholders have been passively waiting for an entry to the legal market (Cheeba Cannabis, 2021a). Within the already challenging context of regulating the recreational pathway, smallholder inclusion is thus complicated by the current absence of economic and political support. Therefore, the full range of smallholder opportunities in the recreational sector can only be reviewed when the legal framework is completed.

| Industrial Cannabis

As the third cannabis pathway, cannabis can be employed for industrial products. Industrial cannabis (hemp) is categorised according to its THC percentage below the 0.2% and can be used for an estimated 25 thousand different products, among which building materials, textiles, ropes, paper, biofuel, bioplastics, and food supplements (Van der Werf et al., 1996). Given the extensive possibilities for industrial applications, of the three cannabis pathways the industrial is regarded to have the highest growth potential and thus to significantly contribute to job creation and poverty alleviation (Budden, 2016). However, typical for industrial cannabis production is the relatively low value of the raw plant material, which therefore requires economies of scale through large-scale outdoor cultivation to create a viable business.

In South Africa, industrial cannabis is regulated by the Department of Agriculture, Land Reform and Rural Development (DALRRD) under the Plant Improvement Act. Since

October 2021, all stakeholders importing, exporting, cultivating, selling, transporting, processing or propagating for breeding and research are required to have a hemp permit and corresponding certificates (DALRRD, n.d; Ramashala et al., 2021). Where the costs of a hemp permit are relatively low compared to a medicinal licence (about R1000), the bureaucratic burden on licence-holders is comparable. Many of the hemp regulations have already been formalised since the hemp pilots in 1994 (National Agricultural Marketing Council, 2017). Most importantly, hemp stakeholders can have a 50-hectare maximum cultivation capacity and need to monitor and report extensively on the location, quantity, quality, stability, transport and safety of their produce. Then, local chiefs of police must be continuously notified about the status of production and all stakeholders are subject to regular inspections.

Despite the many years of promising signs, the government has not managed to create an enabling environment for thriving hemp businesses in South Africa. Industry stakeholders classify the legislative regime as being perpetually imminent. As hemp entrepreneur T. Madliwa states,

“Hemp policy of the past 25 years has been like kicking the ball from one side but blocking it on the other side at the same time”

(T. Madliwa, Personal Communication, April 18, 2022)

The most important limitations seem to be the adoption of the limiting European regulatory standards, tardy issuance of permits, the legally limited choice of cultivars and lacking public support for the required infrastructure. Especially, the limited choice of European-registered seeds leaves hemp entrepreneurs no other choice than to import their cultivars. Although the registration of South African hemp varieties, through the hemp pilots’ research, was supposed to kick-start the national industry, this has not been realised in practice yet (Rightford, 2020). Similarly to the medicinal pathway, these factors make the straightforward integration of the current landrace practices of the ancestral farmers in Mpondoland impossible. However, since the current legal guidelines are constantly changing, it cannot yet be concluded that smallholders do not have a place within the industrial pathway. Similar to the case of traditional medicine, chapter 4 will elaborate on the legal room for manoeuvre required.

In sum, the industrial sector in South Africa is thus still in a state of flux (Coogan, 2016; Goliath, 2021). This pattern resembles the status of industrial markets globally wherein lacking infrastructure, limited finance, advanced quality standards, lacking customer demand and limited legal room for manoeuvre has impeded economic traction (Kramer, 2017; Quinton, 2021). Illustratively, since 2018 Canadian investors collectively lost about €8.2 billion when 80% of the cannabis produced did not meet the required market standards for industrial products (Abbott, 2022). As in global markets, the South African market appears to be more driven promises of its potential than by actual market demand. Although listed pioneering hemp companies in South Africa are slowly stretching the industry's legal boundaries by testing various domestically produced cultivars, the integration of smallholders is not on their priority lists. It can thus be concluded that even if smallholders were willing and able to join the industrial cannabis pathway, the currently unfavourable market dynamics would still challenge the economic viability of their business.

||| **Challenges for smallholder inclusion**

The discussion so far showed that despite the important historic position of smallholders in the South African cannabis industry, the current legislative framework has not provided a clear roadmap for their legal commercialisation. Therefore, despite the national and Eastern Cape government's efforts to formulate an inclusive cannabis policy, the goals of the Master Plan are currently not addressed. In order to understand the top-down factors hampering the inclusion of cannabis smallholders, the interviews with policymakers revealed a set of three explanatory trends.

|| **A Eurocentric and neoliberal approach**

First, the current setup of cannabis legislation is influenced strongly by Eurocentric approach, which has promoted a neoliberal organisation to the cannabis industry (Duvall, 2019). The adoption of neoliberal principles behind contemporary South African development policy date back to the introduction of the Growth Employment and Redistribution (GEAR) plan in 1996 (Narsiah, 2002). Given its core principles of fiscal austerity, export oriented production and privatisation of public services, it is

unsurprising that these trends are also identified in the contemporary cannabis industry. However, the free-market dynamic of unchecked competition is contradictory to the political ambition for smallholder inclusion. In fact, the South African policy framework became exclusively geared towards creating an enabling environment for large-scale and capital intensive companies (often foreign) but failed to integrate the existing group of domestic smallholders (Emery, 2006; Lewis, 2020).

Indicators for this trend were found in the fact that the design of South African legislation heavily leaned on the Canadian policy framework for cannabis. In fact, Canadian laws were copied and taken as a blueprint for the domestic regulation after the 2019 visit of a public-private delegation. With the relatively long run of this Canadian legal design, it provided a good starting point for the South African framework. However, the large-scale commercial and technological sophistication of the Canadian industry does not resemble the South African reality with rurally based smallholders needing access to the formal market. Although, rigorous adaptations of the policy framework were thus needed, these were not made.

Critics say that by mirroring international standards and favouring foreign investments, smallholders are impacted negatively and thus in need of market protection. The Eurocentric setup of the current industry has increased the economic opportunities for capital intensive players and has decreased government's attention to the traditional modes of cannabis cultivation. This has led to a narrowing range of economic opportunities for smallholders. Simultaneously, so far there is no form of market protection for smallholder witnessed. This trend seems to indicate that so far the government has been reluctant to intervene in the free market to satisfy the Master plans' goals for rural development. As an illustration, largely due to current legislative impediments, of the 80 companies holding a medicinal licence in South Africa, none have effectively integrated a smallholder cannabis supply into their value chain (SAPHRA, 2022a). This shows that the wish to employ cannabis instrumentally for economic progress in the competitive market is conflicting with the political ambition of smallholder inclusion.

|| Bridging discourse and reality

As a second dynamic hampering smallholder inclusion, a sheer gap between political discourses and the empirical reality is observed. When reviewing the political promises and anticipating strategies in the Master Plan, the establishment of the thriving and inclusive cannabis industry seems to be around the corner. However, stakeholders all over the cannabis industry indicate that cannabis' potential is structurally oversold by legal actors. As a farmers' representative states,

“If you look in the value chains of cannabis, you observe an Irish Coffee effect. The cream is on top, but at the bottom there is nothing sweet.”

(B. Matha, Personal Communication, April 26, 2022)

This claim is strengthened by the fact that many stakeholders, including government staff, regard the Master Plan as an abstract desktop document, and so far, contributing little to address the real economic struggles of smallholder farmers (Global Go Connect, 2020; S. Sperring, Personal Communication, April 20, 2022). Demonstratively, many municipal staff involved in cannabis regulation never even heard about the document. This fact immediately resonates with the often-heard critique that the establishment of the Master Plan has not been an inclusive process. Besides government representatives, also most farmers find the political promises to be in sheer contrast with their limited participation in the consultation process.

The main reason why the gap between political discourses and empirical reality exists, and why it is so difficult to bridge, is the pressing absence of data and knowledge on crucial elements of the cannabis industry (Coogan, 2016). Largely explained by the prohibitive and criminalising strategies of former cannabis laws, the current legislative design is not thoroughly grounded on empirical data. The primary example of missing data and knowledge is the unknown number of smallholder cannabis farmers in South Africa. Whilst the Master Plan uses an estimate of 900,000 small-scale farmers, the quantitative back-up for this value is non-transparent. Besides this, even government is insufficiently up to date about this target group's geographical locations or demographic background. Further exemplary is the empirical emptiness observed in the Master Plan. Especially the unreferenced figure of R28 billion (estimated value of the South African

cannabis industry) conveys very little meaning about the real size and value of the legal economy (Ramashala et al., 2021, p. 14). Although data provision is identified as one of the challenges in the Master Plan, currently there is little action undertaken to substantiate the quantitative basis on which the inclusion of smallholders can be founded.

Besides the absence of data, there is also a lack of understanding among government staff about the basics of the cannabis plant (A. Verhoef, Personal Communication, April 19, 2022; Parliament of the Republic of South Africa, 2022). Due to the multifaceted character of cannabis, its regulation requires knowledge from various disciplines (e.g. history, economy, law, biology, manufacturing, culture, and climatology). Although the national government does not have to drive all these bodies of knowledge, a serious education on the topic is needed before a functioning policy framework can be issued. A recent case in which all government-approved permits for traditional healers were withdrawn, due to confusing definitions of industrial and recreational cannabis, illustrates the need for a basic education among government staff. Another example, known in the South African context, is the ambiguous fencing requirement of hemp fields which illustrates the unenforceability of some regulations. In fact, policymakers seem to be unaware that the hemp pilots and the multitude of international experiences, have already illustrated that the harms of unfenced hemp fields are negligible (Department of Agriculture, Land Reform and Rural Development, 2021). Whilst these cases have come to light, without good information on cannabis, only few stakeholders are able to take a critical and informed stance against the proposed cannabis policy. Given the urgent need for more insight into the industry's nuances, it is unsurprising that the implementation of inclusive cannabis legislation has not taken shape yet.

|| Information silos

As third and last factor, the implementation of cannabis policy suffers from lacking communication between different stakeholders on different levels (Coogan, 2016). This process is most often referred to as the 'siloeing' of information and action, which leads to an inefficient implementation of cannabis regulation and challenges smallholder inclusion. This process can be understood as a consequence of the vacuum between the

progressive political discourse about the potential of cannabis and the lack of clear guidelines for actions. Because stakeholders all across the industry want to be ready when the legislative framework is completed, they have already started to act autonomously outside official guidelines.

Siloing occurs on various places, in various forms and for various reasons simultaneously. Looking at the current communication between cannabis stakeholders, it has become paramount that fragmentation occurs along sectorial boundaries. A division observed is between sectors, for example (1) the legislative process, (2) the legal private sector, (3) the illegal private sector, (4) civil society, and (5) knowledge institutes. A highly uneven pattern of communication between these sectors is observed. Illustratively, while the legal framework for medicinal cannabis connects to capital-intensive companies, smallholder farmers do not find any connection to the legal reality. As a consequence, stakeholders develop an increasing distrust between them. Although the politicisation of information is sometimes regarded to be deliberate, most stakeholders believe that improved communication within and between these silos can favour an egalitarian industry.

The information silos are also well visible within and between governmental layers and organisational bodies. Communication between both vertical layers (national, provincial, municipal and ward level) and horizontal bodies (departments, agencies and committees) is fragmented. Looking at the vertical coherence, it becomes clear that inclusive policy formulation on the national level is dependent on bottom-up public consultation. In turn, the provincial and local departments are majorly responsible for the practical implementation of smallholder inclusion and thus rely on clear mandates and support from the national level. In practice however, these lines of communication seem to be partly broken and to strongly impede both inclusive consultation and policy implementation.

As with the shortage of knowledge, the siloing of information has a wide range of negative consequences for the process of smallholder inclusion. Currently, stakeholders from all three pathways are pursuing their own line of reasoning in trying to offer smallholders access to the formal market. Despite the many good intentions, however,

through the absence of government's coordination and communication, smallholder farmers experience the pull from these different market forces. Within this process, smallholders are driven to take increased risk to participate in new (illegal) markets which are not yet proved to be economically viable (S. Sperring, Personal Communication, April 20, 2022). Striking cases of the real impact of this process are the haphazard appointment of uninformed farmers' 'representatives', who turn out to pursue individual financial interests. In other instances, private companies looking for investment directly approached local municipalities and traditional leaders to sign memoranda of understanding about the acquisition of their land. These trends increase the unequal playing field disadvantaging smallholders.

||| Conclusion

Under the first research question, this chapter has reviewed the historical background and current legislative status of the South African cannabis industry. Answering this question, it has become clear that while national government expresses the strong ambition to build an inclusive and sustainable cannabis industry, the legislative design does currently not allow for this. The legislative macro context in which the ancestral farmers' livelihoods must be embedded is thus highly challenging for smallholders.

Although the political values and goals formulated in the Master Plan are in line with the global wave towards cannabis deregulation, the political objective of smallholder inclusion is currently not being met. Rather, smallholder inclusion appears to be a politically contentious topic for which no one is eager to take responsibility. While the Master Plan is a valuable skeleton to structure the cannabis industry, it insufficiently provides meaningful guidelines for the lower political echelons to practically realise inclusion. This is explained by the fact that the current legislative design and its execution have insufficiently taken into account the already existing cannabis markets in South Africa.

Despite that the legal frameworks for medicinal and industrial cannabis have taken shape, also economically the pathways provide a challenging context for smallholders. Important factors in this are the western perspective on healthcare and western

production standards which make the market segments inaccessible for capital-poor stakeholders. On recreational cannabis, a major legislative void is observed which fits into the pattern of perpetual imminence, and induces much uncertainty about the future of smallholder inclusion. In fact, the impossibility to sell landrace cannabis has a strong negative impact on the economic and social wellbeing of the ancestral cannabis farmers in Mpondoland.

Lastly, three indicators were identified to hamper smallholder inclusion from a top-down perspective. While the twentieth century prohibition of cannabis has clear colonial roots, the contemporary South African cannabis industry reiterates these exclusionary dynamics through Eurocentrism. Illustratively, the duplication of international policy guidelines and the neoliberal approach to the cannabis industry disadvantage rural farmers. In fact, it can be concluded that by embracing the principle of free market competition, the government has countered its own political ambitions for smallholder inclusion. Simultaneously, a large divide is observed between political promises and the economic reality of smallholders. So far, this gap has so far not been bridged due to the limited provision of basic education and rigorous data on key aspects of the smallholder economy. Lastly, the shortage of evidence-based decision-making is further impeded by stark vertical and horizontal information silos.



Chapter 2.

The Mpondoland landrace economy

||| Introduction

Where chapter 1 has presented a broad overview of the historic and legislative perspectives on the cannabis industry, this chapter takes an ethnographic perspective on ancestral farmers' cultivation practices and aspirations which are subject to the integration into the legal framework. Therewith it aims to show the current economic status of the landrace production and the particularities the traditional cultivation to specify what inclusion of these farmers would entail. The research question structuring the chapter is: *What is the current status of the smallholder cultivation in Mpondoland, and what are the current practices and aspirations of the ancestral cannabis farmers?*

In answering this question, first, the rapid decline of the landrace market and its interrelation with recent economic and legislative changes is presented. Also, briefly attention is given to the forces impeding smallholders from pursuing alternative livelihood strategies. Subsequently, Scoones' livelihoods analysis guides the detailed description of the landrace practice and farmers' aspirations.

||| The status of cultivation in Mpondoland

The ancestral cannabis economy in Mpondoland is momentarily in full collapse. The market demand for the traditional cultivated landrace has been declining already for the past ten years, but in the last two years has almost completely disappeared. Farmers illustrate their plight by explaining their trusted customers have stopped buying their cannabis, which has turned their cultivation from a demand-driven to a supply-driven practice. The household survey conducted among ancestral farmers (see Table 4.1, Appendix 4) showed that on average rural cannabis households had their last customer 22 months ago. Therewith farmers have lost their decades-old tradition to economically survive of their cultivation. The Director Development Planning in Ntabankulu local municipality supports this observation by stating,

"You can see the level of desperation in the cannabis communities. The farmers are poor and hungry, and they hope to sell their last bit of cannabis."

(N. Ndlaku, Personal Communication, April 25, 2022)

Examining how the evaporation of demand for landrace cannabis has occurred, there are three main explanatory factors. Firstly, since the 2018 landmark decision of the Constitutional Court to legalise adult cultivation, possession and use of cannabis, South Africa has witnessed a rapid increase in the number of urban and rurally based consumers growing cannabis privately (S. Sperring, Personal Communication, April 20, 2022). Even though no exact data on the magnitude of this impact is available, it is clear that self-cultivation functions as a substitution for the illegal cannabis market. While, from a legal point of view, the shrinking size of the illegal market is seen as a positive development, the economic impact of this policy revisions is seen to severely harm the economic resilience of ancestral farmers (Howell, 2016). In light of the goals of the Master Plan, the short-term effects of private cultivation seem to have particularly shifted the economic activity from the rural to the urban areas.

The second cause for the declining demand for the landrace is a change in consumer taste and the ability of craft growers to swiftly adapt to the new demand. Whereas during the prohibitionist era most cannabis users were satisfied with landrace cannabis, the increased opening of the cannabis industry has broadened the taste for more potent cannabis strains. The increasing popularity of foreign sinsemilla cannabis, like Exodus Cheese and Sunset Sherbert, has directly driven out the local landrace strains from the recreational market on quality and price (M. Tshonyane, Personal Communication, March 4, 2022). Across the recreational value chain, this has led to significant price drops. Illustratively, within the past five years urban-grown cannabis decreased by about 81%, from R80 to R15 per gram (J. Hursh, Personal Communication, April 19, 2022) and rurally based craft farmers even witnessed an average price drop of 83%, from R30 to R5 per gram (S. Sperring, Personal Communication, April 20, 2022). These price drops have made the economic survival of landrace cultivation nearly impossible.

The last contributing factor to the disappearance of the market demand for landrace cannabis is the illegal dumping of high-quality and cheaply produced cannabis flower

from licenced medicinal cannabis facilities into the recreational market. Although this topic is highly controversial and no official publications have yet addressed this illegal practice, many stakeholders regard this unanticipated side effect of recent policy changes to be a public secret (Anonymous, Personal Communication, March 15, 2022). As such, it would be caused by the financial squeeze resulting from structural investments of licenced facilities in the highly competitive international market. As a consequence of potent and cheap craft cannabis flower nowadays being widely available in South Africa, ancestral farmers are outcompeted from the market. Given the fact that this competition has ultimately arisen from the absence of viable markets for licence-holders, it can be argued that the overselling of cannabis' potential has directly harmed the economic situation of farmers in Mpondoland.

|| Declining living standards

The disappearance of the market demand for the landrace has an immediate impact on the ancestral farmers' lives and practices in three ways. First of all, because ancestral farming households are majorly dependent on the crop, they have seen their income evaporate rapidly. When an incidental customer still buys some landrace cannabis, farmers find themselves in a very poor bargaining position. Where three years ago, farmers still could maintain a fixed price for their crop, their desperate situation now forces them to accept even very low biddings.

The household survey showed that over the last six years, ancestral farmers have experienced an average price drop of 79%, from Ro.18 to Ro.04 per gram of landrace cannabis. Given the already low prices at the start of this decline, farmers do not have any leeway left to sustain a decent income throughout the year. With near to no income from their cultivation, most ancestral households currently survive on children's grants (R1325 monthly for on average 3 children), old age grants (R1800 monthly) and the remainders of Covid-19 grants (R350 monthly) (See Appendix 3).

Secondly, these lower prices directly correlate to the declining living standards of the rural population. Over the past two years diets have become less diverse and currently many children survive on only two meals per day (N. Nyase, Personal Communication, March 6, 2022), of which one is provided by school (see Image 3 below). Many farmers express their structural feeling of hunger due to food shortages and marginal vegetable harvests, which in turn influences their capacity to make full working days. Because government social grants do not cover the basic costs of living, livelihoods become increasingly less agile due to the short-term focus on immediate income which impedes the long-term adaptation of the cultivation practice. As a direct consequence, some farmers have even pulled their children from school because the required school materials could no longer be afforded. In searching for a substitution, the children's labour capacity is then automatically employed to the cannabis cultivation. Other families could not afford a dignified funeral for their parents. A clearer sign of the desperation position in the recent market conditions than in the following quote can cannot be found,

“Our lives were better when the police were sending the helicopters and spraying our fields with poison. Can you please bring back the helicopter?”

(G. Sandile, Personal Communication, March 4, 2022)

Image 3



Farmers Cooking Breakfast Oats in Homestead Kitchen. Author's image, (May 2022)

As a last set of consequences of the economic degradation, increased risk-taking and wasting of cannabis is observed. In their attempts to find customers, ancestral farmers have started to carry their cannabis out of the rural villages. With cannabis arrests structurally going on, farmers take the increasing risk of exposure only when they are in immediate need for food, which occurs ever more frequently. Although the carrying of a fifty-litre bag of cannabis on the head is extremely tiresome and often does not lead to any sales, farmers feel they have no choice but to keep looking for their customers. Simultaneously, useable cannabis flower is increasingly wasted. Since farmers have not been able to move their product, their ongoing cultivation has led to growing cannabis surpluses stacked in fifty-litre bags in their homestead kitchens. Contrary to farmers' practices of the past years, the household survey showed that on average they now keep a surplus of forty kilograms of cannabis flowers and thirty kilograms of cannabis leaves and trimming material. While chapter 4 delves deeper into the economic potential of this surplus cannabis, some farmers have already dumped their stock in nearby forests or burned it.

|| Impediments to alternative livelihood strategies

A legitimate follow-up question is why the ancestral farmers keep cultivating large amounts of landrace cannabis if they can no longer make a profit of it. The interviews with farmers yield four explanatory factors for this. Firstly, the demand for cannabis has disappeared gradually, which forced farmers only recently to seriously explore alternative livelihood strategies. Initially the number of customers and the frequency of their visits only reduced slowly, but prices stayed relatively stable. Gradually, the lowest quality of landrace cannabis could not be sold anymore and later also the demand for the highest grades disappeared. Nevertheless, the visits of incidental buyers have until very recently kept farmers hoping for a return of economic prosperity. The current reduction of production by as much as 60% in the past two years illustrates that more farmers have realised that the absent demand might be a permanent situation.

A second factor why smallholders retain the cannabis production is the marginal introduction of new agricultural crops as a substitute for cannabis. Most farmers indicate that the climatological conditions of drought and heavy rain makes the

cultivation of other crops very challenging. In a risk assessment executed by the Umzimvubu local municipality, these extreme weather conditions were also identified as a threat to the socioeconomic well-being of the rural farming communities. Their private food production farmers, mainly consisting of grazing animals and cultivation of cereal and fruit crops, is therewith under structural stress. Although there are substitution crops imaginable that could thrive in niche markets in the area, which is explored in chapter 4, these crops have not (yet) found their way into local cultivation routines. An explanatory factor for this is a continuation of the traditional reliance on the resilient food crops: mealies, cabbage, spinach, (sweet) potatoes and tomatoes (Ojewo et al., 2012). Most farmers are thus historically averse to new crops, which often need artificial fertilisers, herbicides, and advanced knowledge systems.

A third factor is that the community lacks sufficient organisational and technical capacities given the seriousness of the problem. While farmers are very aware of their plight, they jointly express the incapability to be autonomously realise a solution. Community discussions on the village and ward level address the questions at hand but can hardly grasp the wider dynamics of the cannabis market and legislative changes causing the market to dwindle. Also inherent gendered dynamics seem to play a role since female farmers have a double burden with the social reproductive tasks additional to their cultivation labour. With adolescent men seeking employment outside the region, the labour capacity of children is increasingly employed. Farmers are constantly puzzling to come up with practical next steps to improve their situation which is complicated by the formal unemployment rate in the Eastern Cape of above 47.4% (ECSECC, 2021, p. 1). Eventually, most farmers resort to the only thing they know that has ever provided them with an income, which leaves them to continue the cycle of surplus landrace production.

A last factor contributing to the surplus production is the widespread discourse about the value of the landrace cannabis. As explained in the definition section, within cannabis industries, landraces are often regarded as valuable intellectual property with a genetic superiority. This material value is however often not directly related to its monetary value. The ancestral landrace cannabis is a striking example of this, with

farmers currently unable to sell their ‘extremely valuable’ dubbed product, but with all stakeholders having difficulty pinpointing what constitutes this value. Even experts state that the most valuable element of the landrace might be in its unknown properties. Put strikingly by seed specialist Arne Verhoef,

“It’s value lies in the myth. Because of the myth that it is something special. I would argue that it is because it carries this certain signature.”

(A. Verhoef, Personal Communication, April 19, 2022)

Since farmers generally do not know the specific properties of the landrace, they seem to copy this discourse and hold on tight to their landrace seed, which paradoxically does not gain them any financial benefit.

||| **The Mpondoland landrace practice**

To advance the exploration of fitting livelihood strategies for the ancestral farmers, their cultivation practice must first be understood. This is needed to realistically assess how their current situation relates to the proposed pathways of the Master Plan. To approach this, first the geography of Mpondoland is reviewed to illustrate the challenging natural environment for alternative livelihood strategies. Secondly, the current production capacity of the region is shown to illustrate its economic potential. Lastly, the traditional cultivation practice is characterised by five indicators showing its large divide with large-scale commercial agriculture.

|| **Demography and geography**

Regarding the total number of ancestral cannabis farmers, few data is available. This is mainly because the ancestral farmers were forced to deeply retract into the most isolated areas of Mpondoland during prohibition. This also explains the continuous debate about this important piece of data. As mentioned, the estimate of 900,000 small-scale farmers, used in the Master Plan, seriously lacks quantitative back-up. Despite the calculations behind the figure not being mentioned anywhere, mainstream media and official government publications have structurally used the estimate. Nevertheless, a more informed and narrow range of the total number of ancestral farmers in

Mpondoland is provided by the UFSN. Their members estimate that the Mpondoland hosts between 20,000 and 60,000 cannabis farming households. The large difference between the lower and the upper boundary is partly caused by the integration of children in the workforce. Since Prof. Cousins' estimate of the Eastern Cape's informal agricultural sector (35,725 households) falls within this range, the UFSN estimates are regarded as most plausible and are used for the extrapolations of the household survey data (Fourie, 2018, p. 340).

When the total number of ancestral farmers is taken as a guideline, the scale and density of traditional cannabis production can be approximated. Image 4 below depicts an aerial snapshot of the Umzimvubu river system, which is the lifeline of the Mpondoland cannabis cultivation. The tree-shaped river system consists out of four branches: the Itsitsa, the Tina, the Umzimvubu and the Umzintlava, which together host most cannabis farmers alongside their bedding. An aerial scan indicates that the entire system and adjacent mountain ranges cover an area of about 206,506 hectares. The gradual expansion of the cultivation practices has created a loose network of independent cannabis communities of varying sizes ranging from tens to hundreds of concentrated farming households.

Image 4



An Aerial Overview of the Entire Umzimvubu River System in Mpondoland Hosting the Majority of the Ancestral Farmers. The nearest major town Lusikisiki (15,553 inhabitants) has been highlighted for reference of scale. Retrieved from Google Earth and edited, (January 2023)

|| Production capacity

To approximate the total production area of landrace cannabis in Mpondoland, the size of 171 separate cannabis fields, in two communities visited, was digitally mapped out (see Appendix 6). This revealed that each ancestral farmer possesses three cannabis fields of on average 3064 m², which amounts to, 9359 m² per farming household. Factoring in the UFSN estimates of the total number of ancestral farming households, this indicates that the total production area in Mpondoland lies between 18,719 and 56,157 hectares. As a comparison, this area equals the size of between 12,264 and 36,790 rugby fields. Relating these values to the size of the Umzimvubu river system, it can be stated that between 9% and 27% of the riverbed surface in Mpondoland is covered by cannabis fields. Their remote locations have caused the absence of municipality services like running water, electricity, schools, or hospitals. Combined with the harsh climatological conditions for agriculture in these valleys, this sheer production density of cannabis cultivation in this area is remarkable.

The household survey (see Tables 4.1 - 4.3, Appendix 4) shows that the median seasonal harvest of the average field has a volume of 154 litres. Typically, this amount is packaged in 50-litre sacks or 200-litre barrels and is stored in the homestead kitchen, (see Image 5 below). The volumetric weight of this cannabis (still containing seeds converts to an annual harvest of about 27 kilograms of pure cannabis flower per field. With an average of three fields per household, this results in a potential annual production of approximately 80 kilograms of cannabis flower per household, which has a potential value of R60619 (\$3413). Further extrapolations on the more specific economic potential of this production are presented in chapter 4.

The extrapolations of the household survey data on the individual production indicate that if the entire Mpondoland region would cultivate to its full potential, between 1495 and 4485 tons of landrace cannabis can be produced annually (see Table 4.3, Appendix 4).

Image 5



The Separation Process of Flower and Seeds and Cannabis Storage in the Homestead. Author's image, (March 2022)

|| Into the landrace practice

The cultivation practice of the Mpondo landrace has five features that can be taken into consideration when alternative livelihood strategies are introduced.

| The Mpondo landrace

The first feature that sets apart the ancestral cultivation practice from all other modes of cannabis farming, is the exclusive cultivation of the Mpondo landrace. The landrace cultivar has the typical sativa-dominant physiology of the relatively thin long stem, narrow leaves, and shallow roots (see Image 6 below). The dominant use of this cultivar can be understood by the multitude of special character traits. Agronomically, the strain has naturally adapted to the local climate and is by the farmers most valued for its excellent drought-resistant, moisture-loving and pest-suppressing properties (Budden, 2016). From the recreational user's point of view, prior to the change in customer taste, the strain was valued for its light energetic high and its low THC content (ranging from 2.5% to 8%) (Ndlaku, 2019). Research on the medicinal properties of the strain are reviewed later, but the landrace is often valued for its rich content of the specific

cannabinoids: 3.2% THCV, 0.4% CBL, 0.3% CBD, 4.2% CBG and 3% CBN and terpenes, majorly limonene, pinene and geraniol (Ferreira, 2022).

Image 6



Typical Physiology of the Female Plants of the Mpondo Landrace Strain. Footage of Simon Sperring, (May 2022)

Turning towards the farming practice, the self-provision of landrace seeds is remarkable since no financial means are required. In doing so, ancestral farmers plant both male and female plants on their plots and let them pollinate naturally. Even though this is generally regarded as an unconventional cultivation method, since it negatively impacts on the flower quality, this technique provides farmers with an abundant seed production. In fact, as much as half of the total weight of the harvested cannabis flower may consist of seeds, but farmers have now supplied themselves with a free seeds stock

for next season. This specific technique partly explains how ancestral farmers have been able to sustain themselves economically during times of prohibition. When the dominance of self-provision of seeds, and its historic function is understood, it becomes clear that alternative livelihood strategies would be most successful if they consider preserving this traditional practice. In fact, looking at the few ancestral farmers shifting towards the craft cannabis practice, due to a different set of limitations, their businesses do not straightforwardly thrive. Although the introduction of new seed types is thus not impossible, changing the farming practice appears to be less efficient than integrating the traditional cultivation practice in a new legislative framework and identifying its market demand.

| The basic resources and techniques

As a next important characterisation, the landrace cultivation is sustained with very limited agricultural tools and monetary investment. This is largely explained by the traditional non-mechanised and organic mode of farming which provide household with food and cannabis simultaneously. In the areas without electricity, the contemporary style of subsistence farming purely depends on human and animal power. Each farming household has an individual ownership over a garden on communal land, where traditional food crops are grown and provide the family with a basic nutrition. Most farmers fence their cannabis plots by weaving locally grown thorn bushes into a wooden demarcation, which also protects the plants from grazing cattle.

Also in preparing the soil for sowing, in February of August, the basic resources and manual techniques are used. Prior to cultivation, farmers cover the rock-hard topsoil with manure and subsequently plough it with a span of oxen, cows or donkeys (see Image 7 below). Only organic fertilisers are used for this and the absence of artificial inputs like salts, pesticides or herbicides reduces the financial pressure on the household. A privately owned flock of cattle is fed with home-grown mealies and their excrements are mixed with dried cannabis stalks from last harvest to be used as manure. Farmers with smaller plots turn their soils manually, for which basic tools like the sickle and the bush knife are used. The remainder of the cultivation cycle is filled with manually weeding and cleaning the soil.

Image 7



Farmers Ploughing the Soil with a Span of Oxen in Preparation of Sowing. Footage of Simon Sperring, (March 2022)

The traditional mode of farming is also recognised through the absence of irrigation systems. The absence of pumps ties in with the regional absence of electricity, which is prevalent in the most rural parts of Mpondoland. Where an occasional pump is available, it is commonly shared by multiple households. However, most farmers are dependent on the seasonal rainfall, which means that in dry periods irrigation is done manually. Many farmers indicate that the carrying of buckets of water from the closest river is the most tiresome task of the cultivation, which drives some farmers to only cultivate during the rainy season. Farmers start their six-hour working day as early as possible to avoid the hot afternoon sun hampering the most labour-intensive tasks. Especially, given the socio reproductive tasks of female farmers additional to the cultivation, a further expansion of daily working hours in case of alternative livelihood strategies is limited. This labour-intensive cultivation strengthens farmer's positive reception to physically less demanding economic activities and therewith balances the hesitance for agrarian change.

| Extensivity and uniformity

A third set of characteristics of the ancestral practice is the extensive and uniform nature of cultivation. Extensive cultivation is recognised by the relatively large size of the cannabis field compared to small cannabis plots of craft farmers. In other words, despite the basic mode of cultivation, the ancestral farming households maintain a spectacular labour productivity. With an average cultivation area of 9359 m² per household, the scale of production is relatively large, which is also reflected in the high seed density of approximately 50 litres per hectare. Because generally both male and female seeds are used, and thus pollination occurs, ancestral farmers yield an average flower quality with a low financial value per unit, instead of an optimised high value flower. Cannabis in the rural context is thus treated as an agricultural bulk commodity. This characteristic is clearly distinguishable from the intensive cultivation style of craft farmers who use artificial inputs, have a smaller number of plants and grow multiple strains simultaneously. Nevertheless, compared to large-scale commercial and mechanised hemp cultivation, commonly cultivating tens of hectares per farmer, the ancestral practice must still be regarded as small-scale.

As an important consequence of mixed cultivation of male and female plants, the optimisation of the flower quality is very challenging. Although most farmers pull their male plants to avoid pollination and to improve the flower quality, many male plants remain in the fields. This is partly due to the need for seed production and is thus a deliberate strategy for sustainable production. As an important contributing factor, male plants do not only grow inside but also outside the cannabis fields where harvest-carrying farmers have accidentally dropped seeds. Throughout the years, this has resulted in countless male plants to firmly root and mature in the near surroundings of almost all cannabis fields in Mpondoland. Since the complete eradication of male plants in the area is thus an insurmountable exercise, this factor forms a clear limitation for alternative livelihood strategies involving the introduction of un-feminised seeds.

The landrace cultivation is also characterised by the relative uniformity of production. The exclusive use of the local landrace strains accounts for a high genetic and physiological uniformity among the female plants and allows farmers to yield a stable

product (Paterson, 2009). Especially in the context of dynamic outdoor cultivation, its standardised production is quite special. The uniformity of plant quality, mainly depending on the effective eradication of male plants, is formalised by a local grading system. The system distinguishes three classes of flower quality based on the colour (maturity), size, smell and seed content. Grade one flower has the highest quality and is recognised by the near absence of seeds and the red colour of the stigma's (hair-like strands on the flower pistil) (WayofLeaf, 2022). Grade two flowers have a higher seed content and lighter coloured stigma's, determining its lesser maturity and its 69% reduction in value (see Table 4.4, Appendix 4). Third grade flowers contain much seed, have a bad smell or brownish colour and only gain 20% of the value of first grade flowers. The presence of this grading system forms a valuable element which can possibly be integrated into alternative livelihood strategies.

| Individual and collective farming

As a fourth characteristic, the seasonal labour cycle of the ancestral farmers is organised by a typical pattern of individual work alternated with collective work. During most stages of cultivation, household members do their work individually or in pairs. Although the majority of farmers wishes to work autonomously, the reasons behind this are diverse. First, this custom is a remainder of the illegal status of their cultivation, whereby farmers were traditionally incentivised to work alone to prevent arrest by informing neighbours (Kepe, 2003). Many farmers still rely on this method, with arrests going on. As a second reason, farmers highly value to independently provide for the family without interference of the different working ethics of peers. Especially during times with food shortages, farmers were trained to survive independently of their neighbours. As one farmer summarises aptly,

“Poverty has made the people here very individualistic”

(M. Tshezi, Personal Communication, March 7, 2022)

As a last motivation for autonomy, farmers refer to challenging group dynamics of jealousy and disagreement within the community. As one farmer put it,

“We are all people, and jealousy is in the people, so we experience that all” [...]

“People are just like water, they are difficult to control”

(T. Mzamane, Personal Communication, March 6, 2022)

Despite these strong dynamics, the cultivation practice however also contains important collective activities. Farmers jointly state that although working collaboratively is sometimes challenging, they are open to collaboration when it results in a higher income. This economic collaboration is done through a ‘lima’ (a group activity) and occurs when the work pressure exceeds the individual labour capacity. Often limas are organised when the harvest needs to be carried to the homestead and the flowers need to be trimmed. Farmers then invite their neighbours, family and friends to jointly work for one or two days to advance the workflow. The host of the lima does not pay the contributors for their services, but as a common ritual, a large pot of the local beer Umqombothi is brewed and shared among all participants. This dynamic of ancestral farmers working individually and collectively presents an important precursor for alternative livelihood strategies using a smallholder cooperative structure.

| Learning by doing and seeing

As a last set of typical elements of ancestral practice, farmers use two dominant modes to reproduce and innovate their activities. First, all farmers have been taught cultivation steps from their parents, who also replicated their parents’ instructions. Because cannabis farming is passed on generationally, child labour has become an integral part of the ancestral tradition. As early as from the age of six, children enter the value chain by manually cleaning and trimming the dried cannabis flowers and from the age of fourteen they start to cultivate their own cannabis plots. Generally, at weekdays, children are sent to school, but in the afternoons and on weekends they are deployed to the cultivation. Most farmers have thus learned to grow cannabis by doing it. This centuries-old heredity of economic practices and corresponding land, across multiple generations, has resulted in a very stable and accessible method. As a direct consequence, most contemporary farmers draw little attention to the question of why

these practices are shaped in a particular manner, but rather aim to adhere to the traditional standard.

However, despite the fixed steps of production, there is room for innovation. The dominant mode through which farmers have learned and internalised new techniques and inputs is through mimicking economic successes of their neighbours. In other words, farmers have kept their cultivation style dynamic through 'learning by seeing'. As Verhoef puts it strikingly,

"The way you convince the farmer is you convince his neighbour"

(A. Verhoef, Personal Communication, April 19, 2022)

These forms of learning give valuable insights in how a possible alteration of the traditional landrace practices might be realised most efficiently. For example, with the average illiteracy rate in the Eastern Cape of 15%, the introduction of books and manuals for adaptation of practices would be little effective (Khuluvhe, 2022). So, although the ancestral practice has historically become standardised, its gradual adoption towards a regulated version is very well possible.

||| **The aspirations of ancestral farmers**

Through the interviews with ancestral farmers, three major aspirations were identified. Namely, (1) the aspiration to earn an income, (2) the aspiration to cultivate legally, and (3) the aspiration to adopt an alternative livelihood strategy. These aspirations and corresponding discussions give insight in how the economic and political marginalisation are experienced by the farmers and how they see their future.

|| **Earning an income**

By far the most dominant driver behind ancestral cannabis cultivation in Mpondoland is the generation of an income and the improvement of economic resilience. Looking at the history of Mpondoland, it becomes clear that basic income generation has always been the underlying motivation for cannabis cultivation. In other words, to the ancestral farmers, cannabis has always been, and still is, only a cash crop. This fact can be substantiated with various observations. For example, during cultivation, farmers focus

on producing the highest quality of cannabis to optimise the monetary value. They are not concerned with to whom their cannabis is sold or what products are made from it, as long as it generates an income. Also, the marginal use of the plant locally supports this argument. Especially striking is the absence of cannabis use among female farmers, which shows that the full harvest is exclusively geared for sales.

Although this economic rationale behind cannabis cultivation seems rather obvious, this fact has structurally been misunderstood by most stakeholders across the industry. This is caused by a widely dispersed misconception about how farmers value their cannabis cultivation, challenging its economic function. The misunderstanding is that the cultivation of landrace cannabis is a cultural element of the Xhosa and Mpondo cultures, instead of a simple economic practice. In this frame, most stakeholders regard cultivation to constitute an Indigenous Knowledge System, which needs to be preserved. It is then argued, that because the cultivation is an indispensable cultural aspect, it must not at all be subject to change. However, this conception about the relation between cannabis and the ancient cultures is not based on the empirical reality but rather based on uninformed nostalgic, idyllic and romantic notions of the traditional rural economy. As an anonymous stakeholder captures the outsider's vision on the rural cannabis economy,

“We don't really care, we care about that feeling that it inspires in us, that the rural population is still living simply. But in real life they are also starving”

(Anonymous, Personal Communication, March 25, 2022)

The framing of cannabis as a cultural element is rather convincing because it connects to campaigns about the preservation of the landrace cultivar and ties in with the widespread fear of losing black consciousness and Indigenous Knowledge Systems.

Yet, this vision is not shared by the ancestral farmers themselves. Firstly, farmers do not explicitly state that their cultivation practices constitute their culture or that the exact same landrace genetics should be maintained. The increasing number of ancestral farmers trying to switch to more lucrative foreign cannabis seeds and more tech-intensive practices support this observation. Second, the romanticised vision on the traditional way of living and practising landrace cultivation is shattered by the ancestral

farmers showing their economic hardship. Lastly, most ancestral farmers indicate not even liking cannabis cultivation in particular . In fact, farmers have never done their laborious cultivation voluntarily but were driven by the economic necessity. In spite of the fact that farmers are proud of their daily cultivation routines, they mentioned that with time they were forced to appreciate their work. Farmer Makwetu explains this clearly,

“The people are proud of what they are doing, because they are already doing it for many generations. But the farmers do not grow because they love it. They were forced to love it. As a farmer here you learn to accept that cannabis is your thing, it’s the thing you are doing every day. So you eventually end up loving that thing. It is not because we like the cannabis or the work itself, but because this is the only thing that changed our lives. When you are planting cannabis, you can build your life”

(M. Makwetu, Personal Communication, May 7, 2022)

Whilst the cultural misconception is often used as a lobby tool for the ancestral farmers, it has indirect negative consequences for their economic and political inclusion. First, the simplistic notion that the alteration of the traditional cultivation equals cultural degradation actively promotes the Mpondoland farmers to not change their cultivation practice. This does not only limit their agricultural innovation, but also drives them to hold on to the landrace, which hampers the entry to new markets. As a second consequence, the cultural frame hinders the formulation of a legal smallholder provision. This process is complicated by the urge of policymakers to ascribe a cultural preference to the farmers, as observed in the Master Plan.

|| Cultivating legally

Secondly, the farmers express the strong wish for their current cultivation practice to be legalised. Although this is an obvious requirement to achieve the aspired economic resilience, farmers stress this point since police controls are obstructing the trade of their commodity. Most farmers are confused because the ongoing police interference through local road blocks is incongruent with the political discourse about cannabis legalisation and the emphasis therein on the Mpondoland region. As their legal status

remains unchanged, the scepticism and distrust about the possibility for economic betterment also remains. Governments' first steps towards legalisation have clearly not contributed positively to any of their immediate needs.

Simultaneously, most farmers have an adverse attitude towards their own illegal activities. They would rather integrate into the legal cannabis economy instead. While many farmers argue that optimally their cannabis cultivation is recognised as an economic right to support their livelihood, they also understand that changing legislation requires them to produce under a licensing scheme. Despite this positive attitude, it is clear that most farmers have limited financial means and access to information, which makes their autonomous entrance to the legal economy impossible. Strikingly, although some farmers receive financial support, most of them wish to be financially independent of the government. Because in past years, cannabis trade satisfied this goal, their request for information, political representation and the feeling to be included in the process of policy change seem to be more pressing.

|| Adopting an alternative livelihood strategy

As the last aspiration, most ancestral farmers have a positive attitude to adopt alternative livelihood strategies if it broadens the opportunities to their income. Generally, farmers state to be open towards most alternative crops and cultivation techniques. For example, they welcome the introduction of alternative drought-resistance crops, alternative employment or the expansion of their products range. Nevertheless, given farmers' limited knowledge about the legal possibilities, and its corresponding uncertainties, they are hesitant to a priori advocate for one livelihood strategy specifically. As one farmer hints at the growing positive reception towards various pathways of change of their cultivation practice,

“We do not give a child a name before it is born, [...] so it is difficult to decide which direction would be best for us”

(L. Mxenge, Personal Communication, March 6, 2022)

Almost unanimously, farmers indicate that there are no specific elements of their current cultivation practice which cannot be changed when a higher income can be

realised. Farmers only shed away from any hemp-related activities with new cultivars, due to their crosspollinating effects on the landrace. In the same vein, the formation of smallholder cooperatives and collective cultivation is also regarded as a possible concession for more financial gains. From this perspective these aspects thus illustrate the wide range of possible livelihood strategies towards an economically feasible practice.

Despite this clear aspiration, a certain level of ambiguity among farmers' aspirations is found. Although, most farmers still pass on the practice to their children, in order to offer them a skillset for the future, the poor market conditions drive the young generation towards alternative employment. Despite its many impediments the youngest generation of ancestral farmers appears to be more outward looking than the older generations. On the other hand, the oldest generation of farmers value the stability of the traditional practice or even view it as a form of restorative justice. Whereas for young farmers the permanent stay in the rural areas is unlikely, most elderly farmers do not regard labour-based migration out of Mpondoland a viable option. These observations show aspirations of farmers are not homogenous and that for each alternative livelihood strategy proponents as well as opponents can be found.

||| Conclusion

Under the second research question, this chapter has taken an ethnographic perspective to review the current socio-economic status, the agricultural practice and aspirations of ancestral farmers in Mpondoland. In answering this question, it became clear that the traditional landrace practices have been subject to rapid economic decline in the past years. A vicious cycle of the living standards of ancestral livelihoods is observed as a direct consequence of this. Secondly, the current poor economic status of the landrace cultivation indicates that already a marginal improvement in cannabis sales can have a considerable impact on farmers' living standards. However, farmers are not autonomously shifting towards alternative livelihood strategies due to the gradual decline of market demand, their fragile economic position, the shortage of expertise, patterns of gendered labour restraints, the limited introduction of alternative cash crops and the mythical value of the Mpondo landrace.

It has become apparent that the landrace cultivation is by outsiders regarded predominantly as a cultural element instead of an economic need, which discourages farmers to change their practices. This cultural frame has thus been counter effective to the political wish for smallholder commercialisation. Since farmers can neither survive by cultivating landrace cannabis nor easily move away from it according to this strong sentiment, they are also impacted economically and have become prisoners of their traditional cultivation practices.

Concerning smallholders' route towards successful commercialisation, the characteristics of the ancestral practice should be taken into account. The traditional practice is characterised by its exclusive use of the Mpondo landrace for which basic resources and techniques are being used. These characteristics indicate the major gap for ancestral farmers if a shift towards intensive craft cannabis cultivation is to be made. Through the extensive character of the outdoor cultivation farmers yield a highly uniform product which is a promising feature to apply the landrace for new products in a harmonised way. Lastly, the merger of the individual and collective working and learning styles illustrate that the ancestral practice has, to a certain degree, a flexible character to which farming cooperatives might well connect.

Although the aspirations of the ancestral farmers seem to be rather straightforward, a certain level of ambiguity among them is found. On the one hand, farmers are focused on income generation and especially young farmers are increasingly open towards alternative livelihood strategies. On the other hand, the older generation of farmers values the stability of their traditional practice and is therefore somewhat adverse to change. Where these incongruent aspirations meet the economic, judiciary, and political limitations of the cannabis industry it is difficult to predict which livelihood strategies would be most successful. Nevertheless, this also shows that alternative livelihood strategies staying close to the traditional practice can obtain the highest level of acceptance among ancestral farmers.



Chapter 3.

Smallholder representation and cooperatives

III Introduction

So far, this study has shown that despite the political ambition to empower the ancestral farmers in Mpondoland to commercialise their cannabis, in reality their opportunities for financial benefits remain slim. As is clear by now, the liberalisation of the industry has mainly focused on capital-intensive stakeholders and the legal void on smallholder commercialisation has left ancestral farmers politically and economically marginalised. In order to bridge the gap between smallholders' economic realities and the ambition for inclusive and legal commercialisation, farmers' representation and cooperatives-building is by most stakeholders regarded as an essential tool. Nevertheless, discussions on smallholder cooperatives often remain superficial due to a lack of knowledge and experience. Therefore, this chapter elaborates on this topic by exploring the following question: *What are the benefits of smallholder cooperation, and how does it relate to existing forms of representation of the ancestral cannabis farmers in Mpondoland?*

In answering this question, this chapter first presents the benefits of smallholder cooperatives according to corresponding literature and then presents how most stakeholders envision smallholder cooperatives in South Africa to be organised. Secondly, the interplay between top-down guidelines and bottom-up representation is discussed. Most importantly, the existing forms of smallholder representation are reviewed to show that future cooperatives could be built on them.

III What inclusive representation should look like

Before diving into the current situation of smallholder representation in South Africa, it is valuable to briefly review how this would function ideally. In order for farmers' representation to be beneficial for the commercialisation of cannabis, multiple stakeholders would need to be involved and can simultaneously profit from it. As such, farmers would benefit from representation because it lay the foundation for their cooperative which strengthens their market position. Government representatives

could benefit because smallholders would be organised in legitimate groups with a clear point of contact to which potential market protection could be linked. Additionally, also civil society organisation could benefit from the enhanced communication with their target group, as well as industry stakeholders profiting from an entry point for partnerships.

||| **Challenges for inclusive smallholder representation**

In order to understand why such well-functioning representation has not yet emerged, the interplay between the different stakeholder groups is reviewed. First, there is much unclarity on how coherent representation of farmers can be organised. From the governmental point of view, the incertitude already emerges from the lacking focus on the ancestral farmers as a specific target group. Strikingly, two years after the launch of the Master Plan, government institutions are still struggling to start a basic communication with ancestral farmers. Illustratively, although ECRDA consultation meetings in Lusikisiki, Mthatha, and East London targeted sixteen local municipalities, they were deemed unsuccessful because insufficient engagement with the most-needy farmers was realised (M. Maqubela, Personal Communication, April 6, 2022). Instead, only prominent and well connected farmers were supported. This has not only impeded the focused spending of available budget, but has also rendered addressing of the Master Plan's goals impossible. Although the ECRDA states to be aware of the most needy target group, ancestral farmers fiercely express their feeling of being completely excluded from the transition towards legalisation. This seems to indicate that so far policymakers have not translated the ambition for inclusive representation into action.

Farmers' feelings of being left out are not only based on the absence of consultation meetings, but also relate to the rapid push for commercialisation combined with a severe lack of information. By prominently focusing on the political vision of employing cannabis for the rural economy, policymakers seem to have ignored the fact that providing basic guidelines for representation and cooperative-building are primary requirements for commercialisation. This push to swiftly mould the existing practices into the formalised industry has clearly overtaken the slower process of setting up representative structures in the rural context. Illustrative for this point is the fact that

the Master Plan is not translated from English into isiXhosa and isiZulu, which are the mother tongues of most ancestral farmers. Additionally, radio information campaigns hardly reached the rural cannabis communities. This ties in with the low quality of basic infrastructure, limited financial capacity and lacking digital services in Mpondoland. These factors has deadlocked the engagement between farmers and policymakers.

As a last layer of complexity, unclarity about representation intertwines with the incompleteness of the legal framework. The unclear connection between formal licensing and registering of cooperatives has created much distrust between stakeholders. Since it is unsure whether cooperatives will be granted group-licences in the future, and legislation is still under formation, farmers were until recently unable to autonomously mobilise themselves according to official guidelines. The aim of civil society organisations to capacitate farmers to mobilise themselves is therewith also compromised, since next steps towards formal registration could not be made. Due to these uncertainties and the ongoing fear of prosecution, farmers are still hesitant to share personal information. Even local municipalities, who are engaging with their ancestral farmers, are extremely protective about their databases. Taking into account the historic and ongoing criminalisation of these farmers, this protective sentiment is hardly surprising. But since information-sharing is a key factor in registration, trust-building and formalisation of guidelines are conditional steps to move forward.

||| **Smallholder cooperatives**

As one of the most important lessons learned by the of the South African delegation visiting Canada in preparation of the process of policy change was that the formation of smallholder cooperatives is a requirement for successful commercialisation (Lakčević, 2016). Although a detailed scrutiny on how to effectively set up smallholder cooperatives goes beyond the demarcations of this study, the follow paragraphs merge the perspectives of literature with governments' and civil society's discourse about the potential organisation of cooperatives.

The agrarian sociologists Gerald Ortmann and Robert King, who studied farmers' cooperatives in the South African context, define a cooperative as,

'an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise'

(Ortmann & King, 2006, p. 7)

Such a definition can be taken as a starting point for cooperative-formation since it allows farmers under a voluntary membership to combine their economic activity while retaining a certain level of independence.

If functioning well, cooperatives can benefit the interests of various stakeholders simultaneously. From the farmers' point of view, the reduction of costs, the pooling of finances, the harmonisation of production and the centralisation of processing can all lead to a more stable cannabis supply and income (Motiram & Vakulabharanam, 2007, Ortmann & King, 2006). Also, cooperative-building can strengthen local ownership and political representation as well as the provision of information and the improvement of farmers' bargaining power. Government stakeholders also benefit from smallholder cooperatives since it provides a clear entry point to engage with the rural communities. This might lead to a mutual information exchange which can facilitate the harmonised alteration of farming practices. Cooperatives also bring along a range of practical advantages. Most importantly, cooperative-licensing can evade the arduous task for government to licence and tax each individual farmer in the most distant rural places and therewith also provides a clear starting point for a pilot project.

In the past, agricultural cooperatives in South Africa have often failed due to lacking management experience, motivation, knowledge and capital resources (Ortmann & King, 2006, p. 15). Thus, despite the benefits, the constitution and maintenance of cooperatives is a challenging task. These experiences have shown that with a clear set of formal guidelines, successful cooperative-building depends on the interplay between top-down and bottom-up processes in tandem. The group of well-functioning small-scale fisheries cooperatives in South Africa is by many stakeholders mentioned as inspiration.

The experiences of the historic hemp pilots also offer valuable insights about the formation of future cooperatives in Mpondoland. Cooperatives entailing a tight collaboration of a limited number of farmers turned out to be most successful. The geographical concentration and harmonised cultivation style in Mpondoland would connect well to this characteristic. If ancestral farmers would be invited to join a cooperative, as procedural steps they would need to adhere to its constitutional rules, pay an admission fee and register their personal and production data. Since each Mpondoland community consists of many farmers with a wide geographic dispersion, local municipalities envision cooperatives to be hierarchically stacked depending on their function (N. Ndlaku, Personal Communication, April 25, 2022). In such a setup, as proposed under the sixth pillar of the Master Plan, the ancestral farmers growing the landrace would form a primary cooperative which then falls under an overarching secondary cooperative responsible for the processing of the plant (Ortmann & King, 2006, p. 16). Although the exact size and geographical reach of each cooperative can be determined later, it is often suggested to formalise each community as a primary cooperative. Generally, the primary cooperatives can be managed by a local committee or local extension officer. The extent to which each cooperative is formalised and which supportive tasks are offered, can be democratically determined by its members.

||| **Three existing forms of representation**

When reviewing existing forms of representation, it becomes clear that government, civil society organisations and farmers have distinct ideas on how to set up representative structures as a basis for cooperatives. As such three distinct forms of voluntary representation have emerged simultaneously in recent years: (1) the traditional form, (2) the constitutional form, and (3) the independent form. These different approaches are distinguished by the prime actor initiating the farmers' representation. Since they partly overlap and each form has valuable attributes, they are synthesised to indicate how they can provide a foundation for future cooperatives-building.

|| The traditional form

A first model for smallholder representation is to follow the hierarchical traditional leadership structure. Stakeholders, advocating this model, argue that traditional leaders are the primary actors to initiate representation. Under national customary law, cannabis livelihoods could be represented by their local sub-headman, who is subsequently accountable to the local headman, the regional chief and one of the three kings of Mpondoland. Since ancestral farmers are already integrated into these structures, formal organisation of representation might thus be based on them. At least, these structures can be employed to efficiently target ancestral farmers, harmonise their cultivation, collect data, disseminate information and alter cultivation practices. Since these tasks merge with the traditional decision-making procedures, the primary and secondary cooperatives could be realised in Mpondoland. In communities with tight relationships between farmers and their traditional leaders, this model has already allowed for an exchange of and the advancement of cannabis commercialisation. Some chiefs have even formed farmer committees to prepare the community for the upcoming official guidelines.

Despite the potential of these existing structures, various stakeholders, among which also considerable numbers of farmers, do not regard the traditional form the most practical for representation and coordination of cannabis cooperatives. This is mostly because traditional leadership is a centralised power structure and has a rather low level of democratic decision-making procedures. Illustratively, chiefs are born into the role and have little performance-based legitimacy. In communities with conflicts of interest, leaders are only marginally accountable and only limiting critiquing of leaders is possible. With regards to the distribution of money, some community-members accuse their traditional leaders of blatant corruption and abuse of power at the expense of the community. In the past, these factors have led to clashes between the traditional and constitutional representatives. These imbalances have created a strong sense of distrust, and thus many farmers do not want to be represented by their traditional leaders. This illustrates that coherent representation via the traditional form cannot easily be generalised, since it is prone to fail in at least part of the rural communities.

|| The constitutional form

As a second form, the representation of smallholders can be organised via the existing constitutional hierarchies. From a top-down perspective, government representatives would then be the primary actors to initiate representation. The constitutional structures trickling down, from the provincial level to the local municipality, and subsequently to the ward level could be used for this.

As a practical example of this form, since 2021 Ntabankulu local municipality embarked on the ambitious task to register cannabis smallholders in a digital database. Currently, contact-information and identification-numbers of about 400 farmers are officially registered (N. Gcaba, Personal Communication, March 25, 2022). The municipality aims to form structures, with chosen representatives, in order to be prepared for upcoming official guidelines. For the execution of this task, the municipality has mandated local ward councillors to facilitate the formation of cannabis villages committees and to connect them to a structure on the ward level. Ancestral farmers are therewith mandated to jointly appoint their representatives and thus to exert their agency for their political representation. If functioning successfully, the chairpersons of the individual village committees can form an overarching structure on the ward level, which can be repetitively expanded towards the provincial level.

Since this procedure has only recently started, a full review of its functioning cannot yet be given. However, already some points of concern are ventilated by cannabis stakeholders. For example, the role of traditional leaders within the constitutional setup would need to be reviewed, since their consultation cannot be omitted when engaging with the farmers under their authority. Further unknowns are the exact tasks, financial reward and trainings for the appointed representatives. Despite these uncertainties, municipalities trialling the model express that the registering of smallholder at least enhances the direct communication with them and gives a head start in the formalised procedure to come.

|| The independent form

As a last variation of smallholder representation, independent group-forming is witnessed. In this form, farmers themselves are the primary actors who initiate representation. Since this occurs in various forms, the independent form is a broad classification. Typical for these collaborations is their (semi) independence from the traditional and constitutional governance structures. Although in some instances the authorities are approached by these groups, no standardised procedure is followed. Nevertheless, civil society organisations promote this type of group-forming because of its participatory and democratic character. Even though these groups might not yet be formalised and recognised by government, they are considered to be powerful because they offer farmers a platform to express their voices (P. Mahlakata, Personal Communication, May 9, 2022). Furthermore, their representation might shield farmers from political exclusion in the long run. Often, social media platforms are used to share information, to learn about new practices and to discuss possible strategies for collaboration. Occasional examples of successful collaboration are found among craft farmer communities in the eastern part of Mpondoland. This has inspired more farmers to independently shape their representation

Whilst out of the three distinct forms, the independent groups have the strongest autonomy and participatory character, their use for cooperative-formation in their current setup seems to be problematic. This is mainly because members of these groups cannot easily be categorised according to either their geographical location nor their cultivation style. Although some groups have specifically targeted farmers from certain wards or municipalities, often the ancestral and the craft farmers are represented in tandem. This mixed membership, also including newly interested- and non-farming stakeholders, impedes their targeted representation of the ancestral farmers. This would also challenges government to engage with the right farmers group. To what extent this is problematic for cooperation-forming largely depends on the future guidelines for registering and licensing of smallholder cooperatives.

||| Conclusion

Under the third research question, this chapter has reviewed the benefits of smallholder cooperation, and how it relates to existing forms of farmers' representation in Mpondoland. The chapter has shown that smallholder cooperative-building can bridge the gap between farmers' economic realities and the legislative framework. It can thus be regarded as a basic requirement for the successful cannabis commercialisation for smallholders in Mpondoland. When functioning well, cooperatives can support farmers with a stable offtake market and can help government to effectively engage with ancestral farmers. This is valuable given that so far the unfocused consultations in the Eastern Cape severely hampered government' interaction with the target group. The limited information provision in the Xhosa language and the absence of guidelines for cooperative-formation contributed to this process. Lastly, the incompleteness of the legal framework has made stakeholders hesitant to share information, which has burdened the relations between farmers and government representatives with much distrust. These factors have left ancestral farmers with the strong feeling of being excluded.

Prior experiences have shown that the process of smallholder cooperative-building depends on both formal top-down guidelines and bottom-up representation simultaneously. Through the absence of these official guidelines, traditional leaders, local municipality representatives and farmers have followed three distinct forms to representation. Nonetheless, effective representation is unlikely to occur when these primary actors would continue to pursue their separate strategies simultaneously. Rather, a direction for the most practical approach could emerge from their integration.

While the traditional form stays closest to the existing decision-making procedures in Mpondoland, the power-imbalances and the low democratic legitimacy give the model a controversial character. Despite these challenges, formal guidelines for representation can only be effective when the role of traditional leaders is respectfully addressed. Then the independent form is valued for its participatory character which significantly increase the changes of smallholder representation being managed sustainably.

However, the unclarity about the conditions of admission to farmers' groups challenge targeted representation. Also, there is a need to improve the formal interaction with these groups. This leaves the constitutional form as the most structured and furthest advanced foundation for smallholder cooperatives. Compared to the traditional form, it has a higher legitimacy due to the democratic election and performance-based evaluations of government officials. Where this form enable cooperatives to be coordinated from the existing constitutional levels, they must be supplemented with formal guidelines for representation.

Chapter 4. Alternative livelihood strategies

III Introduction

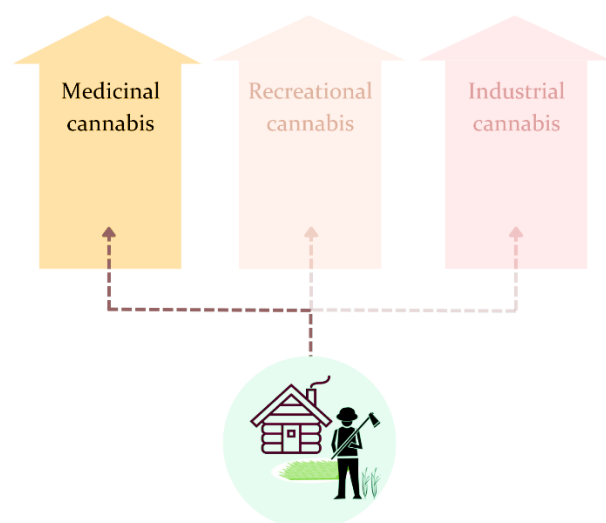
This chapter reviews the connection of the smallholder cultivation practice to the medicinal, recreational, and industrial pathways of the Master Plan to illustrate which options for commercialisation exist. Besides comparing the traditional cultivation to the legal framework, as presented in chapters 1 and 2, this chapter adds the perspectives of the industry stakeholders interviewed to identify which livelihood strategies seem economically, politically, and practically to be most viable in the Mpondoland context. The research question structuring this chapter is: *What are the opportunities and impediments to integrate the smallholder practice in the proposed pathways of the National Cannabis Master Plan?*

In order to approach this question, for each cannabis pathway it is illustrated where and why smallholders can or cannot easily integrate. The opportunities of each pathway for which the Mpondo landrace can be used are considered the low-hanging fruits, which provide a direction of which alternative livelihood strategy is most in line with the traditional cultivation practice. The chapter concludes with a brief exploration of alternative livelihood strategies beyond the Master Plan.

III The landrace as medicinal cannabis

II Opportunities

There is a set of three long-term opportunities for landrace cannabis as medicine. First, there is a growing body of scientific evidence that the Mpondo landrace has various healing qualities, among which most promising is the prevention of blood vessel formation which might reduce



cancer tumour-growth (Bala, et al., 2018). Even though this research is still in its infancy, increasing attention is devoted to the medicinal and medical properties of the landrace. Contributing to this is the testing of Mpondo landrace extracts, which were found to be clean from heavy metals and contained a broad spectrum of terpenes (Ferreira, 2022). Especially, the high concentrations of rarer cannabinoids is regarded as valuable. These features appear to fit new applications of medicinal cannabis particularly well. Literature (Abrams, 2017; Ng & Chang, 2022) and GESLabs suggest (P. Nel, Personal Communication, May 13, 2022) that the landrace might function as a domestically-produced plant-based substitute for the antiretroviral Marinol (Syndros), which is used to mitigate the side effects of HIV, AIDS, Chachexia and Chemotherapy. So, while standardised and indoor controlled cannabis remains tough competition for outdoor cultivation, the ancestral farmers might regain some bargaining power if research confirms and further specifies the medicinal value of landrace.

A second, and counterintuitive opportunity between the landrace practices and the medicinal sector, is that smallholders do not have to match the pharmaceutical quality standards. Although this is often thought to be a requirement, this is not the case because according to GESLabs, modern techniques allow pharmaceutical companies to efficiently clean outdoor-grown cannabis (P. Nel, Personal Communication, May 13, 2022). This means that the basic cultivation techniques and varying quality standards of smallholders should be no impediment to their participation in the medicinal pathway. This creates opportunities for a basic compensation system whereby smallholders would thus be contracted by licenced companies and could be paid according to the THC percentage per kilo of cannabis supplied. Uniquely for South Africa, it could thus be possible to use domestically grown landrace cannabis for Active Pharmaceutical Ingredients (API) for high-standard medicinal products. Such a model would put smallholders in a position to supply their cannabis for medicine without drastically needing to change their current practices.

As a third and last positive dynamic, both legislatively and practically, there are opportunities for the medicinal application of landrace cannabis. Regarding the existing SAPRHA regulations, the framework for medicinal stakeholders to which the

smallholder cultivation can be linked is already in place. Given the small production capacity of the individual household, this integration would require a cooperative structure. However, for this to work in practice, an amendment must be made which would allow medicinal companies to contract future smallholder cooperatives (Cheeba Cannabis, 2021b). In fact, from the government's point of view, this provides an opportunity to incentivise licence holders to become the driving actors behind smallholder inclusion. Through the extension of their protocols, established enterprises could make a considerable social impact on the rural cannabis economy while simultaneously bearing the financial risks. Where pharmaceutical companies proposed such collaborations in recent years, they did not materialise due to the reliance on legislative rigidity (S. Gallow, Personal Communication, April 19, 2022).

|| Impediments

Despite the opportunities of the landrace as medicinal cannabis, there are three major impediments. The first set derives from the Eurocentric setup of the medicinal market. Chapter 1 already showed this trend by addressing the medicinal industry's highly-standardised and bureaucratic organisation within the dominant paradigm of clinical healthcare. The high financial barriers and knowledge standards limit the access of smallholders to this premium segment of the market to capital-intensive companies. These factors thus leave little room for the autonomous participation of traditional producers. Although some pharmaceutical companies have philosophised about smallholder support, they are not prone to let their costly operation depend on such an untested model. According to GESLabs, smallholder engagement would only become feasible if the market size of cannabis medicine internationally would triple (P. Nel, Personal Communication, May 13, 2022). Given the little financial, practical or punitive

incentives for pharmaceutical companies providing smallholder support, is, unsurprisingly, regarded as a form of charity.

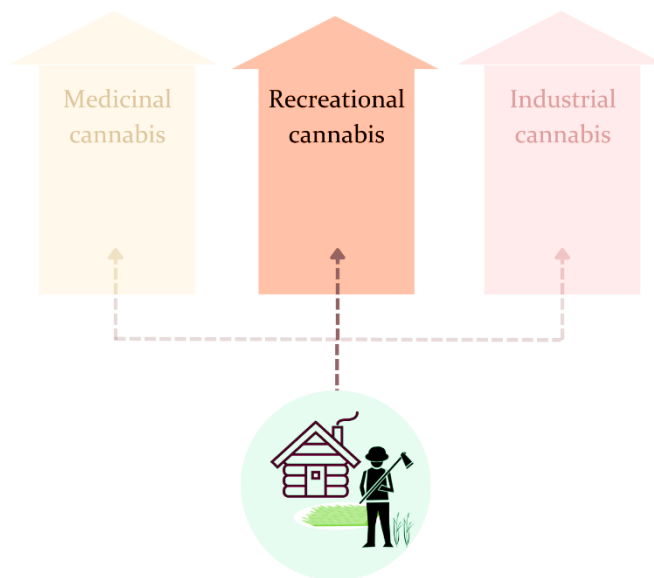
Secondly, the joint production capacity of the Mpondoland smallholders is disproportionately large compared to the expected size of demand for medicinal cannabis products. As an illustration, the household survey (see Table 4.4, Appendix 4) indicated that the entire Mpondoland region could produce between 60 and 179 tons of pure cannabis extract yearly which can be used for medicinal full extract cannabis oil (feco). Against current prices, this production capacity has an approximate retail value of minimally R 6 billion (\$337 million). This comes down to a potential annual turnover of R300,000 (\$16,890) per household. Despite this major economic potential, the production capacity by far exceeds the size of the international market for cannabis-based medicine. Since the urban based and high-tech facilities are already struggling to find enough demand, also a tight market for smallholders can be expected.

As a last impediment, the Mpondo landrace cannot yet legally be used as medical cannabis by treating it as complementary medicine. While landrace cannabis is increasingly viewed as complementary medicine since its 2020 change of schedules, the THC and CBD contents of the Mpondo landrace still exceed the determined thresholds (0.001% THC and 0.0075% CBD) (SAPHRA, 2019, 2022b). This thus prohibits smallholders to cultivate the landrace cannabis for complementary medicine. However, most South Africans highly value the distinction between western-based and traditional medicine which could be a basis to consider a rescheduling. This value of traditional medicine is evidenced by the 60% of South Africans consulting traditional healers (Van Wyk, Van Oudtshoorn, & Gericke, 2010). Although, for smallholders, this model would be particularly attractive because the relatively low bureaucratic burden for traditional medicine, an alternation of legislation is needed to let smallholders profit from this. Unsurprisingly, pharmaceutical companies generally reject such an exception-based model, since it could erect a sizeable and unregulated competition to their businesses.

||| The landrace as recreational cannabis

|| Opportunities

For landrace cannabis as recreational products there is a set of four long-term opportunities. First, the propagation of landrace cannabis for recreational use has various advantages. Taking note of the government's harm-reduction strategy in relation to the 1.8 million cannabis users, the mild



cannabinoid contents of the Mpondo landrace (between 2.5 - 8% THC) could be a valuable asset (New Frontier Data, 2021, p. 100). This might form a domestic answer to the rapidly increasing potency of the sinsemilla cannabis. Further, the stimulation of the landrace market would also be also the most direct way to employ domestically-produced cannabis for rural development. Popularising the traditional landrace cannabis could form a counterweight against the Eurocentric character of the industry. Also, the unique qualities of South African cannabis could have a considerable appeal internationally.

Secondly, if new recreational markets for landrace cannabis could be identified, the large production capacity in Mpondoland has the potential to significantly boost the economic activity in the rural areas. An important indication for this positive outlook is the abundance of recreational products that can be made from the landrace. Whereas until now landrace cannabis was solely supplied as raw flower, it could also be offered in alternative forms and thus serving more customers. Through extensive trials, smallholders have been able to produce pre-rolled joints, hashish, feco, edibles, dabs and rosins from the landrace. Although these products have been limited to the illegal market, their proven quality could eventually help to legalise their trade. The ancestral

style of learning-by-seeing is a valuable asset which can promote the rapid spread of the production process of these new products. This is already observed in multiple localities. While the current domestic demand for these novel products is still rather small, regulation of their production and sales would contribute to a higher demand.

Substantiating this economic potential quantitatively, the household survey provides valuable insights about these novel markets (see Table 4.6, Appendix 4). As illustration, the production of landrace hashish, feco and pre-rolled joints are quantified. If all ancestral farmers in Mpondoland would devote their harvest to one of these recreational products, each household could produce 2.62 kilograms of hashish, or 3 kilograms of feco, or 74,750 pre-rolled joints annually. Extrapolating these values to the entire Mpondoland region embodies a spectacular market size. Respectively, between 52 and 157 tons of hashish (minimally worth R2.6 billion (\$147 million)), or between 60 and 179 tons of feco (minimally worth R6 billion (\$336 million)), or between 1495 and 4485 million joints (minimally worth R7.4 (\$420 million)). Of these three products, the pre-rolled joints make the strongest case because even by a conservative estimate, a high turnover could be realised without technologically innovating the traditional cultivation practices.

Thirdly, although the absence of immediate demand for these products is problematic, the supply of these recreational products suits the rural context and the traditional cultivation practice. Important factors here are the limited infrastructure and technology required for the production and transport of these compact and high-value products. For example, by adding a set of simple processing steps to farmers' current cultivation, such as basic water- or ethanol-extraction, farmers could expand job creation. Since cultivation relies on minimum inputs and basic techniques, their businesses could survive on a very low marginal revenue. Illustratively, initial trials indicate that smallholders could survive on the sales of feco even when they produce it

90% cheaper than high-tech cannabis facilities. These factors give smallholders more leeway to remain economically viable in the future regulated market.

As a last opportunity in the recreational pathway, civil society organisations are found to promote landrace-based products from Mpondoland by making the initial design for a quality mark (see Image 8 below). This hints towards an appellation of origin scheme which is currently globally being explored for landrace cultivars and can be further formalised. Such an appellation would be a quality mark based on a legally-binding geographical indication to a particular commodity, or derivatives thereof, which can enhance its reputation, protection and its monetary value (Giraud, 2020). Beyond geographical location, the appellation can additionally protect quality factors such as its genetic profile or cultivation methods used. Given such a fixed set of indicators, the landrace-products can become tied to the Mpondoland region and could promote businesses of smallholder farmers. In order to build a unique identity for the Mpondo landrace, the geographical dispersion and genetic spectrum would have to be further determined and registered.

Image 8



Initial Designs of Quality Mark for Landrace-based Products from Mpondoland. Footage of the UFSN, (January 2023)

|| Impediments

Similar to the medicinal sector, there is a set of three impediments to landrace for recreational products. First, there is the all-compassing legislative barrier of the lasting prohibition on commercialisation of any cannabis for recreational purposes. Although recent revisions of the Cannabis for Private Purposes Bill sought to solve this ban via an additional clause for commercialisation, this has not created any legal ground for smallholders to sell their produce domestically nor internationally. Thus far, no licence category for recreational producers has been formulated. Also, the practical implementation of licences is currently still impossible due to the absence of registration procedures. Given the improbability of entirely exempting smallholders from licenced cultivation, these farmers appear to remain prohibited to access this market. Thus smallholder commercialisation in this pathway remains unlikely to materialise in the short run.

Secondly, looking past the legal prohibition, the rapidly waning market demand for raw landrace flowers and rapidly expanding competition of other strains is problematic. This process started with the introduction of foreign genetics that have become the dominant taste of the South African cannabis consumer. The wide variety of high-grade foreign cannabis strains, generally regarded superior due to a better appearance, more refined taste and a broad choice of psychotropic effects, has outcompeted the traditional landrace. According to urban based cannabis dealers nowadays over 80% of their customers prefers high-grade cannabis to raw landrace flower (Anonymous, Personal Communication, March 15, 2022). The foreign sinsemilla genetics are currently even found in the most rural areas of Mpondoland, where farmers aim to shift their cultivation practices. However, local cannabis experts largely agree that although improvement of traditional cultivation practices might be an important part of smallholder inclusion, competing on quality with craft farmers and indoor facilities would be very difficult. Especially, the proper drying of cannabis in the humid Eastern Cape climate is complicated. These factors illustrate that regardless of the legislative barriers, also the free-market dynamics in this pathway are unfavourable for the autonomous survival of smallholders.

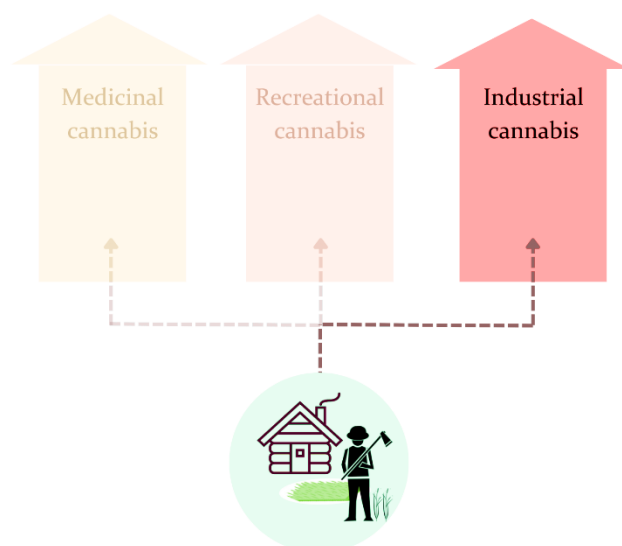
A last limitation for the supply of landrace cannabis for the recreational circuit is the prohibition of cannabis social clubs since August 31st, 2022. Given the fact that globally cannabis retailing shops provide one of the best potential structures to regulate safe supply, control and tax recreational cannabis, their prohibition in South Africa is a major setback for potential commercialisation of smallholders (Taylor, 2020). Although, according to the Cape Town High Court, the existing club models did not offer a legal way to supply recreational cannabis, the clubs were arguably the next best option to commercialise the supply of smallholder cannabis. According to civil society organisation clubs could namely have functioned as the advertisement platform to promote domestically-grown landrace-based cannabis products specifically focusing the rural producers. Especially, because innovative trials with caregiver models, directly linking cannabis consumers and patients to farmers, were already on the way (S. Sperring, Personal Communication, April 20, 2022). With many cannabis clubs continuing underground, they are rendered useless to any legal model of smallholder commercialisation.

||| The landrace as industrial cannabis

|| Opportunities

Finally, of the three cannabis pathways, the industrial sector has the largest potential for integrating the landrace practices on the short term. There is a set of three opportunities illustrating this potential. First, in light of the shift towards a biobased economy, the demand for industrial hemp products is,

compared to recreational products, expected to grow considerably in the coming years (T. Budden, Personal Communication, April 7, 2022). This would not only offer many



job opportunities, but also embodies a large economic impact. The most important step to achieve this, is to legally reclassify the Mpondo landrace as a national hemp variety which is exclusive to Eastern Cape region. This approach would allow ancestral farmers to continue their current cultivation practice and thus optimise the chances of successful adoption of this livelihood strategy. If this model were to be adopted and integrated into the conventional building industry, multiple parts of the landrace could be marketed separately to diversify the farmers' offer. The plant's roots, leaves, seeds, short fibres and hurd (shivs) are all potential inputs for a variety of industrial products. Regarding the nature of the Mpondo landrace, the Master Plan already stresses the need to further study its exact usability. Although the direct use of landrace for industrial purposes is not presented in the Master Plan, this study asserts it can serve its core goals.

Secondly, the consideration of smallholder cannabis cultivation for industrial purposes is promising because it is not entirely innovative. There are multiple international precedents where hemp policies are interpreted in such a way that smallholder cultivation is integrated into the industry. For example, Switzerland and Malawi adjusted their definitions of what constitutes industrial cannabis to diversify the supply (THC percentage up to 1%). Furthermore, the Nepalese hemp industry has also managed to thrive economically as a result of landrace strains (THC percentage up to 7%) being integrated within the value chain (R. Stone, Personal Communication, May 14, 2022). These precedents suggest that a slight leeway within international standards could serve the smallholder economy. Whilst national deviance from the international regulations is often regarded as a provocative topic, in December 2022, the European Parliament, a strong voice within international hemp standards, increased the THC allowed for industrial hemp (EIHA, 2022). Besides the international guidelines, the national hemp regulations and policy frameworks of Indigenous Knowledge Systems (IKS) and Broad-Based Black Economic Empowerment (BBBEE) could also be employed to support smallholder integration.

Shifting to the domestic level, there is also a South African precedent of smallholder engagement in the hemp industry. Under the support of Small and Medium-sized Enterprises (SMEs), the hemp pilots did not only allow for smallholder hemp cultivation, but also allow the sales of hemp-based artisanal handicraft, such as

artefacts, paper, pens, beads, bags and haberdasheries (see Image 9 below). Around the hemp sites in Gqeberha, Mthiza and Libode these low-tech microscopic spin-off businesses provided smallholders with an extra source of income. At some point, the Department of Agriculture even successfully opened a shop in Johannesburg to provide a commercial outlet for the smallholder products. Despite this success, the SMME activity faded in tandem with the slow withdrawal of financial government support. Nevertheless, this study illustrates the possible spin-off effects of the contemporary engagement of smallholders in the hemp industry.

Image 9



Handicraft Bags Made of Hemp Fibres of the Eastern Cape Hemp Pilot Project Initiatives. Author's image, (April 2022)

As the third opportunity the contemporary production of landrace stalks holds a significant economic potential. The stalks can be converted into hurd, which forms the basis for hempcrete blocks that are used as biobased construction materials to build walls and floors (see Image 10 below). This application can be regarded as a low-hanging fruit among the industrial applications since its cultivation, processing and transport connects well to the extensive and uniform character of the traditional landrace practices in Mpondoland. Hemp hurd is specifically suitable for the ancestral cultivation

because it can also be grown, harvested and processed manually. It also has relatively low quality requirements and can be used for various products. Even the introduction of low-tech processing equipment, such as mobile decorticators, fits the processing of this product (Hemp Today, 2022). Lastly, the use of the landrace stalks omits the processing of THC-containing materials, which brings the practice almost in line with the existing regulations.

The household survey (see Table 4.7, Appendix 4), shows that each household could produce around 7.7 tons of landrace stalk annually. This can lead to an aggregated production of between 168,234 and 504,702 tons annually, which converts into 112,767 and 338,301 tons of clean hurd respectively. Against current prices this is worth minimally R451,068,658 (\$25 million). Expressed on the household level, this comes down to 5.4 tons of clean hurd annually which could provide each livelihood with a R21,554 (\$1213) turnover. Even if not all this value is direct income, due to costs of processing, transportation and retail, it can still account for a considerable growth in income compared to current situation. Although this potential is currently squandered through the burning or rotting of the landrace stalks, it would be much cheaper to use this domestically-grown hemp rather than the current importing of the biomass (Budden, 2016).

Image 10



1. (upper), *Landrace Stalks Collected for Testing its Application Possibilities*. Footage of Simon Sperring, (May 2022). 2 (left) *Cannabis Hurd* (Afrimat, 2023), 3 (right), *Cannabis Hurd Pressed into Hempcrete Blocks as Building Material* (Afrimat, 2023)

The field tests executed for this research indicate that production of landrace stalks, which are then converted into hurd for hempcrete building materials, can significantly impact on the South African biobased economy. Depending on the quality of stalks, the production of clean hurd from Mpondoland can be processed into between 113 million and 338 million hempcrete building blocks annually, which would provide the materials for between 49,029 and 147,008 typical Reconstruction and Development Programme (RDP) houses. The pioneering work of Afrimat and the Best Grow's mobile decorticators campaign form important starting points for this (5050 Community; Hemp Today, 2022). As an additional function to sustainability, the landrace stalk production, leads to the annual sequestration of 18.7 tons of CO₂ per household. For the entire

Mpondoland region this amounts to between 374,379 and 1.1 million tons of CO₂, which can, against the current value, be monetised to minimally R382,465,116 (\$21 million) in carbon credits. These factors are direct examples of how domestically-produced smallholders landrace cannabis can be employed for a pilot project in the short run and potentially boost the South African biobased economy in the long run.

|| Impediments

In spite of these opportunities the integration of ancestral cultivation practice in the industrial market is hindered by a set of four impediments. Firstly, the South African hemp industry is still in its infancy and despite the favourable political discourse about industrial cannabis has no proven structure for smallholders to be integrated in (Rightford, 2020). Looking at the current market trends, there is no structural demand for South African hemp products, either internationally as domestically. This ties in with the delayed issuance of hemp permits and the absence of required infrastructure and processing facilities. There is also a dominant misunderstanding that because cannabis can be used for industrial purposes, all cultivars could be used for all industrial applications. However, since this is absolutely not the case, even the most realistic industrial application of the landrace must be subjected to extensive research. The Master Plan adds to this the high financial barriers in the open competitive market, which already became apparent from the hemp pilots. On the basis of these impediments, the few successful hemp companies strongly discourage smallholders to join the stagnant market without market protection.

Secondly, there are characteristics of the traditional practice, impeding direct competition with commercial stakeholders in the industrial cannabis sector. For example, smallholder farmers cannot participate in an open market due to their relatively small plot sizes. The economies of scale behind hemp cultivation indicates that the cost of production can only be afforded if large-scale production is realised. Illustratively, the hemp pilots required smallholder cooperatives to cultivate 10,000 hectares. Even at this scale, smallholder cooperatives could not survive without government support. Given the available 0,9 hectares per ancestral farmer, more such a scale is unfeasible. Additionally, taking into account the uneven terrain, the

geographical dispersion of plots and the basic agricultural techniques, mechanised harvesting and crop aggregation are complicated. These factors showcase that market protection combined with the existing practices would be most promising.

As a third impeding factor, particular to the industrial sector, the transport of the unprocessed biomass, mainly the landrace stalks, is challenging and costly. The limited infrastructural network in Mpondoland makes transport by truck or boat slow and expensive. The production of hemp fibre for textiles only stays profitable if harvesting and processing are done within a 150 kilometres radius. When exceeding this limit, the transport costs negate the potential for producing profitably. This implies that cultivation of textile grade fibre is very unlikely to become profitable in Mpondoland. Integrating smallholders into the hemp value chain would thus require the construction of multiple processing facilities and the provision of transport. Even with such facilities in place, success is not ensured as is illustrated by previous attempts with the Magwa cannabis incubator in the Eastern Cape, which failed due to many more practical hurdles. It is therefore also not surprising that government-led hemp projects have all been positioned outside the Mpondoland area and have thus not contributed to the smallholder economy.

Lastly, the introduction of foreign bred hemp cultivars presents another array of challenges in the Mpondoland area. Most importantly, the stringent requirements for registered seeds for industrial production exclude all landrace varieties from the legal hemp market. Also, smallholder hemp cultivation is challenged by cross pollination which negatively impacts on the flower quality of adjacent farmers. The introduction of hemp would thus presumably harm the existing forms of landrace cultivation. This can only be omitted when all ancestral farmers would shift towards hemp cultivation in tandem. However, most foreign hemp varieties turn out to be unsuitable for the quickly changing weather condition in the Eastern Cape. Due to high temperatures the THC content often exceeds the 0.2% threshold which left very few cultivars to fall within official limits (T. Madliwa, Personal Communication, April 18, 2022). This is a problem that hemp cultivators have already been struggling with for years, and which has also made the enforcement of regulations impossible. Despite the Agricultural Research

Council's (ARC) efforts to produce and register the South African hemp cultivars Type 1 and Type 2, their resistance to the Mpondoland climate do not seem to triumph the landrace genetics.

||| **Livelihood strategies beyond the master plan**

As last perspective, civil society organisations express that rural economic growth development, poverty alleviation and job creation would not necessarily need to be realised through the three cannabis pathways, but could also be promoted by livelihood strategies beyond the Master Plan. Scoones captures these livelihood strategies in the term 'diversification'. Especially, given the wide variety of general and market-specific challenges to commercialisation of landrace cannabis, economically viable niche markets and alternative crops could bring farmer an easier access to market opportunities. Diversification can thus avoid the convoluted discussion on cannabis regulations and corresponding decisions.

|| **Alternative cannabis products**

Two cannabis products that are not discussed by the Master Plan are mentioned by various stakeholders as being suitable for ancestral farmers. First, there is biochar, which basically is a charcoal variety with an optimised cationic exchange capacity which makes it suitable as a biodegradable fertiliser (A. Verhoef, Personal Communication, April 19, 2022). When worked into arable soil, the biochar absorbs, and later exchanges, valuable nutrients creating long-term fertility. Biochar can be made by treating the landrace stalks with pyrolysis, which would only require a marginal alteration of the ancestral farmers' practices of burning the cannabis stalks. While the market demand for biochar must be explored further, the ability to manually produce it and its local application for productivity increase, gives it a great potential to contribute to smallholder food security in Mpondoland.

The second alternative cannabis product often discussed is cannabis terpenes. Terpenes are non-psychoactive hydrocarbon compounds, belonging to the biggest class of secondary metabolites, and are important precursors for various aromas (Gershenzon, & Dudareva, 2007). Cannabis, and specifically the Mpondo landrace, contains a

relatively high concentration of a variety of terpenes, which can be mechanically isolated and marketed in a pure form. A major reason to look at terpene harvesting for landrace is because it is similar to an already existing industry in South Africa where terpenes are extracted from other plants, such as geraniums. Whereas both pharmaceutical and the food and beverages industries make use of terpenes, the application of cannabis has not yet been fully explored. Although proper extraction of these content-substances is a meticulous process, the cultivation of its source material can well be done by smallholders.

|| Alternative cash crops

Despite the harsh climatological conditions of Mpondoland there is a range of alternative high-value cash crops that have proven to be economically viable in South Africa and might thus serve as a new source of income for ancestral farmers. Prime examples are Xhosa Dreamroot, Loofah, Wild Watermelons (for their seed content), Moringa, Bamboo, Sceletium and Geraniums (A. Verhoef, Personal Communication, April 19, 2022). Many of these crops are unique to the Eastern Cape area which makes their (re)introduction promising. If their proper marketisation could justify the distance to offtake markets, they could offer farmers a wider product choice and can lower their economic dependence on landrace cannabis. Important requirements for their introduction are the provision of basic agricultural support and incentivisation of crop improvement. As a side effects of such a change of practices the potential eradication of landrace cannabis genetics must be factored in. Especially, given the growing international attention to cultivar preservation and prevention of ecological losses, a conservation programme which delinks the survival of the plant from its free-market commercialisation could be considered.

|| Alternative cannabis-related activities

A last phenomenon cannabis tourism (cannatourism) is increasingly coined as an alternative livelihood strategy in Mpondoland. Cannabis tourism can be defined as leisure travel and activities related to legal cannabis culture, communities, cultivation, and processing (Bologna, 2022). With the global share of travellers seeking cannabis-

experience currently already at a staggering 29%, the sector is expanding rapidly (MMGY Travel Intelligence, 2022). Since 2021 also the first rural South African cannabis attractions were offered along the Wild Coast and in Limpopo.

The majority of farmers and the traditional authority in Mpondoland interviewed would be welcoming the development of cannatourism. Local residents are proud to show their traditional way of living and with much hospitality they would invite guided groups of tourists. The Mpondoland mountain ranges and its vast river system form a beautiful natural environmental where smallholders can offer a unique cannabis-experience. Since cannatourism takes the form of nature-based ecotourism, it is particularly attractive to a niche of adventurous travellers. Nevertheless, it can offer rural households a broad range of new activities to generate an income, such as short-term residence in traditional huts and guided tours through the outdoor cannabis fields. These core elements which would make the experience unique and can be combined with more conventional tourist activities, such as hiking, horse riding, kayaking or wildlife spotting throughout the Eastern Cape.

Cannatourism as livelihood strategy could bring associated benefits. First, as an addition to landrace commercialisation, cannatourism can lead to less dependence on cannabis sales and can thus contribute to economic resilience. Secondly, besides engaging with the traditional cannabis communities, if legalised, cannatourism is also a great platform to showcase and advertise landrace-based products. Lastly, such activities suit the already existing tourist trainings which are followed by the local youth to broaden their job-perspectives. Similar to other rural areas, the introduction of tourism can incentivise an array of spin-off markets for SMMEs. As such, job creation and infrastructural development would be stimulated when additional services like guided tours, transportation, accommodation, and catering would be offered.

||| Conclusion

Under the fourth research question, this chapter has reviewed the challenges and opportunities of the smallholder practice in relation to the proposed pathways in the National Cannabis Master Plan. In answering this question, the perspectives of

government, farmers and industry stakeholders showed that all three cannabis pathways entail a wide range of economic, legal, and practical impediments for smallholder integration. Therefore, as a minimum, smallholders' survivability in the cannabis economy requires the government to amend its legislation. Further, without targeted support, the ancestral farmers will be outcompeted by capital-intensive stakeholders and thus the inclusive cannabis industry cannot be realised. Nevertheless, this chapter has also shown that each of the pathways offers opportunities for the Mpondo landrace (see Appendix 7). These opportunities centre around the economic potential of the specific cultivar and the continuation of the most elements of the traditional smallholder practice.

This exercise has shown that using the landrace stalks for hurd to make biobased hempcrete building materials in the industrial sector offers the most logical starting point for piloting smallholder commercialisation in the short run. Although, the smallholder practice does poorly fit the large-scale commercial hemp cultivation changing the legal status of Mpondo landrace into a registered cultivar of industrial hemp would offer smallholders a multitude of direct opportunities. Contrary to the limited demand for medicinal and recreational cannabis, the market demand for biobased building materials is expected to grow with the transition towards sustainable development. Also the wide range of unexplored industrial product that can be made from landrace cannabis and its potential contribution to job-creation hint towards a logical starting point for commercialisation.

Although the short term potential of the landrace appears to be highest in the industrial pathway, it would be too premature to entirely disregard the medicinal and recreational pathways. Rather, the opportunities of the landrace as medicine and as recreational products seem to be only viable in the long run. Illustratively, despite the growing body of scientific evidence of the landrace's health properties and the potential of smallholder cooperatives to collaborate with licenced facilities, the limited market demand for medicinal products significantly curbs the economic opportunities in the short run. Also despite the wide range of new recreational products, such as hashish and oils, and the

missing legal framework and limited market demand are very restrictive for short-term economic opportunities.

Lastly, civil society organisations indicate that livelihood strategies beyond the Master Plan should not be forgotten. Especially since the commercialisation of the landrace cannabis is not easy, innovative cannabis products, alternative cash crops and cannabis-related activities could be trialled.



Chapter 5.

An evaluation to move forward

||| Introduction

This evaluation chapter integrates the findings of the previous four chapters and makes up the balance regarding the useability of their findings. This exercise ascertains their implications and bridges the gap to the recommendations for policymakers. The research question guiding this chapter is: *On what preconditions does smallholder cannabis commercialisation depend, and what are the most favourable approaches for its implementation?*

The chapter approaches this question by firstly extracting from each chapter the major precondition on which commercialisation of the landrace cannabis is dependent. Therewith the four preconditions for landrace commercialisation represent the perspectives of the Master Plan, of the farmers, of civil society, and of the industry stakeholders. Secondly, to give some clarity on the practical implications of the study's findings, three approaches to smallholder commercialisation are presented.

||| Preconditions for smallholder commercialisation

|| A special regulation for smallholders

The first precondition, which arose from the legal perspective in chapter 1, is the requirement of the legal environment for allowing smallholders to cultivate, process and trade cannabis (Lewis, 2020). It has become clear that despite the positive discourse about smallholder inclusion, the current legal framework does not yet provide the necessary tools to put this ambition into practice. However, a special regulation for smallholders is not only imperative for the long term opportunities to commercialise landrace cannabis but is also essential for the short-term introduction of a pilot project showcasing its viability. In view of evidence-based harm prevention and reduction, smallholder cultivation can then be deregulated, and as a positive consequence a full stop to the ineffective cannabis-related arrests can be realised (Howell, 2016; Nutt, 2016).

As an important addition legalisation and an initial pilot project need to be narrowly focused on the limited target group of the ancestral smallholders. This is paramount to ensure that the necessary market protection benefits the right target group. Since cannabis smallholders are a diverse group, both demographically and geographically, effective policy largely depends on a clear definition of the target group. In the past years, this absence of focus has made support efforts rather haphazard. It must be acknowledged that clearly defining the target-group is an arduous exercise and requires time and political decisiveness. Nevertheless, if this process is done in tandem with cooperatives-formation, its positive impact on rural livelihoods could be considerable.

|| Building on the traditional practice

As the second precondition, which arose from the farmers' perspectives in chapter 2, smallholder inclusion needs to take the existing landrace cultivation as the starting point. This precondition has become paramount from the ancestral farmers' marginalised socio-economic position and their ambivalent aspirations. In other words, the most promising livelihood strategies for ancestral farmers are those that do not expect farmers to drastically change their cultivation practices. Rather, by preserving as many elements of the traditional cultivation, especially the use of the Mpondo landrace genetics, their economic potential can be maximised.

Although, the ancestral farmers themselves seem to prioritise economic return over the cultural rationale, in light of the racially-marginalising eradication campaigns in the past, they view the continuation of their practices as a form of restorative justice. Regardless of this point, farmers agree that enabling legislation must be based on economic rights instead of cultural rights.

|| Representative smallholder cooperatives

As the third precondition, derived from the discussion in chapter 3, successful smallholder commercialisation is likely to be dependent on well-functioning farmers' representation and smallholder cooperatives. It has become clear that the formation of cooperatives can provide for a connection between top-down guidelines and bottom-up structures of representation. The forms of a standardised procedure for registration,

a clear division of roles, including traditional authority, and the provision of affordable cooperative-licences can subsequently be linked to forms of representation which already exist, namely the forms of constitutional, traditional, and independent representation.

Farmers' cooperatives are not only valuable because they provide farmers with a connection to the legal bureaucratic system, but also because of their wider range of positive attributes. The hemp pilots have proven this by aggregating individual production capacities and to enabling the centralised storage and processing. Since smallholder commercialisation will stagnate if the safe transport of cannabis is not provided, cooperatives might also make a valuable contribution to the provision of that service. Finally, harmonising cultivation practice can further strengthen comparative advantages and can increase the impact of plant improvement campaigns. These factors combined illustrate why cooperatives can be regarded as a precondition for smallholder commercialisation.

|| Exploration of market opportunities

As the last essential precondition, derived from the perspectives of industry stakeholders in chapter 4, smallholders are in need of external support to ensure sufficient offtake of their landrace cannabis. Since the demand for landrace, in its current form as raw flower, is virtually absent, the exploration of market demand for landrace-based products is necessary for a viable economic model. Although the exploration of offtake opportunities in a free market could be regarded as a private sector task, it is identified as a precondition for commercialisation because even if the legislative barriers for smallholders are resolved, the free-market dynamics cannot be expected to offer farmers enough offtake opportunities. In fact, legalising smallholder cultivation without effective market exploration could even subject farmers to increasing competition, potentially leading to overproduction and further price reduction. Such a scenario can thus worsen the economic position and living standards of the ancestral farmers.

This indicates that the exploration of market opportunities is entangled a the special regulation or a pilot project for smallholders since a certain degree of market protection is required. This would thus require the government to reflect on the exact role and strategy they want to adopt in this process. For example, as an important consideration, it could be determined whether the government wants to incentivise smallholders or to disincentivise other stakeholders. The mandate for research and development done by the Council for Scientific and Industrial Research (CSIR) during the hemp pilots could serve as case for comparison. Regardless of the chosen strategy, it has become clear that if the government wishes to take responsibility for smallholder inclusion, they are required to intervene in the free market to a certain degree.

||| **A practical way forward**

The last section of this evaluation chapter explores the implications of the study's findings for the practical approach of smallholder commercialisation. Although chapter 4 already indicated that the industrial pathway would be economically, politically, and practically the most logical starting point for commercialisation, this can still be approached in at least three ways. Subsequently a broad, a focused and a diverse approach are discussed.

|| **A broad approach**

First, the commercialisation of the landrace can take a broad approach. Such a broad approach entails that smallholders would be legally allowed to use the landrace for cannabis products in multiple pathways simultaneously. The current setup of the Master Plan implicitly promotes this model since no cannabis pathways are deemed unsuitable for smallholder entry. Although in theory the ample opportunities for landrace-based medicinal, recreational, and industrial products could be exploited, in practice the multitude of downsides to this approach outweigh its advantages.

Illustratively, while a broad approach could have a risk-spreading effect, it would require a special smallholder regulation within the separate regulatory frameworks for medicinal, recreational and industrial cannabis. Consequently, three coherent sets of protective measures would have to be set up to ensure a level playing field for

smallholders. This would not only mean a heavy bureaucratic burden for government but could also form a problematic monetary burden. Although a broad approach offers farmers a wide range of livelihood strategies to be pursued, this would also require government to offer the necessary market protection in various markets simultaneously. In other words, government would need to take an interventionist role in the cannabis industry, which reigns against their neoliberal political ideology and may not even be legally feasible. So, while a broad approach seemingly meets farmers' aspirations to employ the landrace to any remunerative offtake, government's hesitancy for far-reaching market protection within the competitive free market environment is likely to ultimately leave smallholders disadvantaged.

Also on the practical side there are trade-offs between the cannabis pathways which makes the broad approach unrealistic. A first trade-off is found between the industrial pathway and the medicinal or recreation ones. If the landrace would be used for industrial products, the massive scale of production and the cross-pollination problem would degrade the general flower quality in the Mpondoland region, and could negatively impact the cannabis for medicinal and recreational purposes. If the industrial pathways is left aside for now, a second trade-off is found between the medicinal and recreational pathways. Given the limited domestic and international demand for cannabis medicine and recreational products, both of these markets are prone to be saturated quickly and would thus only marginally to the smallholder economy. Taking into account the recent closing of all legal outlets for recreational cannabis, these pathways are unlikely to provide smallholders with job opportunities in the short run and could even force smallholders back in the illegal circuit. These factors also complicate the setup of a first pilot project to test the viability of commercialisation. Therefore, the study's findings imply that a more protective and focused approach starting with the industrial market could be best considered.

|| A focused approach

As the second option to implement smallholder commercialisation a focused approach can be taken. A focus approach would mean that the smallholder-grown Mpondo landrace would be specifically linked to a fixed set of products for which market

protection will be organised. The particular products assigned to smallholders can be all located in one cannabis pathway or might be dispersed across various sectors. A focused approach thus recognises that the free market will not bring about smallholder inclusion automatically and that by effectively altering fewer regulatory frameworks smallholders would ultimately benefit from a delimited product choice and protected market (Lakčević, 2016). In comparison with a broad approach it would thus enable a much more targeted support to ancestral farmers. Given the need for a clear starting point for smallholder commercialisation the advantages of this approach seem to outweigh its disadvantages.

Presumably, this approach allows government to get a solid grip on a specific segments in which smallholders are supported and could thus introduce targeted regulations. This can address the lack of uniformity in production which has so far hindered the governmental approach smallholder inclusion. Although the autonomy of farmer would be slightly curbed, a fixed set of regulated products could also enhance product quality and safety. Even though such a protected market might result in a lower financial award per household, the uniform cultivation style in Mpondoland could compensate for this with a stable offtake. On the practical side, Since such a smallholder provision is highly focused, a lower bureaucratic and financial burden can be expected. Finally, the delimited set of products facilitates a first pilot project promoting the traditional practices and the landrace genetics.

When revisiting the exclusionary dynamics of the medicinal and recreational pathways, the industrial pathway seems to provide the most logical starting point for smallholder commercialisation. As an illustration, if the focused approach is taken, an exclusive set of landrace-based industrial products can be identified on which a smallholder market is shielded from large-scale commercial hemp competitors. Chapter 4 has shown that the landrace hurd, used for hempcrete building materials, appears to be a suitable product to be (exclusively) tied to the smallholder practice. This would leave textile-grade fibres, seeds, leaves and roots to the commercial hemp industry. Although domestic markets for hurd would need to be expanded and imports must be disincentivised, its increasing demand can balance its relatively low marginal value

(Budden, 2016). Especially, when mobile decortication is incentivised and local aggregation points are reassigned, local ownership and efficient transportation can be realised. As important precursors for a pilot project, the pioneering work of Afrimat on assessing the quality of landrace hurd and The Best Grow's mobile decortication campaigns in the Eastern Cape could be taken as a lead (5050 Community, 2022; Hemp Today, 2022).

Such a highly focused approach has even more attractive attributes. Because with hurd production smallholders would only need to commercialise the non-psychoactive parts of the landrace, the legislative hemp framework would only need to be slightly adapted. Although the Mpondo landrace would need to be officially reclassified as a type of hemp and the surplus flower production must be addressed, it would directly enable smallholders to commercialise the commodity already in their possession. Further, the aggregated production could be expected to contribute to job creation in the short run for which the practices of the smallholder cooperatives during the hemp pilots are a valuable source of inspiration. In line with these experiences a maximum production capacity per individual household, or per cooperative, would be a valuable means for an equal wealth distribution and for the prevention of overproduction.

|| A diverse approach

As a last option, smallholder commercialisation can be diversely approached by considering a wider range of alternative livelihood strategies outside the pathways discussed in the Master Plan. Especially given the multitude of challenges in all three cannabis pathways, the Mast Plan's goals for rural development could as efficiently be promoted when new niche markets are considered. Such a diverse approach opens up three new categories of livelihood strategies: (1) the production of landrace-based products not discussed in the Master Plan (2) the introduction of alternative cash crops, and (3) the introduction of alternative cannabis-related activities. Given their expected market sizes to be small, a combination of these markets might be required to match the monetary return of the historic cannabis market. This implies that diversification can be considered an additional strategy to a pilot project in a focused approach.

To give the diverse approach some practical starting points, chapter 4 presented the products and activities mostly discussed by cannabis stakeholders. As such, promising landrace-based products not discussed in the master plan are biochar and terpenes. Since these products would not require the traditional cultivation practice to be changed drastically, a diverse approach would logically trial these livelihood strategies first. Then alternative cash crops could be introduced, for which Xhosa Dreamroot, Loofah, Wild Watermelons, Moringa, Bamboo, Sceletium and Geraniums seem to be most promising. Besides the distance to markets must be investigated, the formation of cooperatives and the provision of material and knowledge support to smallholders might be required. Lastly, stakeholders perceive cannatourism as a promising cannabis-associated livelihood strategy beyond the Master Plan. For this to be promoted a collaboration with the Department of Tourism would be valuable.

||| Conclusion

This discussion chapter has synthesised on what preconditions smallholder commercialisation depends, and what its most favourable approaches for implementation are. The findings of the study suggest that inclusive cannabis policy for smallholders depends on at least four preconditions. First, the absence of a legal framework is the largest bottleneck for smallholder commercialisation. Without a coherent and targeted smallholder provision, all other efforts for inclusion are rendered useless. Secondly, such a provision could best take the existing ancestral cultivation practice as starting point in order to ensure that alternative livelihood strategies become autonomously driven, and thus becoming sustainable. Thirdly, smallholder commercialisation also depends on representative cooperatives, which can be organised in various ways. It has become obvious that cooperatives-formation can provide for a connection between top-down guidelines for group formation and bottom-up forms of representation. Lastly, addressing these preconditions will only lead to a positive impact on smallholders' living standards if sufficient market exploration for landrace-based products is done. Although market demand generally arises from free-market dynamics, to realise the Master Plan's goals the government would best consider creating a protected environment for smallholder commercialisation.

The last part of the discussion focused on three model through which smallholder commercialisation can be approached. First, the current setup of the Master Plan hints at a broad approach by aiming for the broadest valorisation of the plant. However, this approach does not seem to satisfy the protective conditions needed by smallholders. Therewith, the broad approach is nearly unimplementable and thus regarded as being unfavourable for ancestral farmers. Secondly, a focused approach has significantly more advantages, since it can more effectively offer a protected market segment with a demarcated set of products. The most favourable starting point for a pilot project within such a focused approach would be the commercialisation of the landrace stalks for biobased hempcrete building materials. Lastly, a diverse approach provides policymakers with a way to eschew the complexity of cannabis within rural development and could thus add livelihood strategies beyond the Master Plan. Although alternative products, crops and activities require additional research, they seem to have the potential to contribute to economic growth, poverty alleviation and job creation.

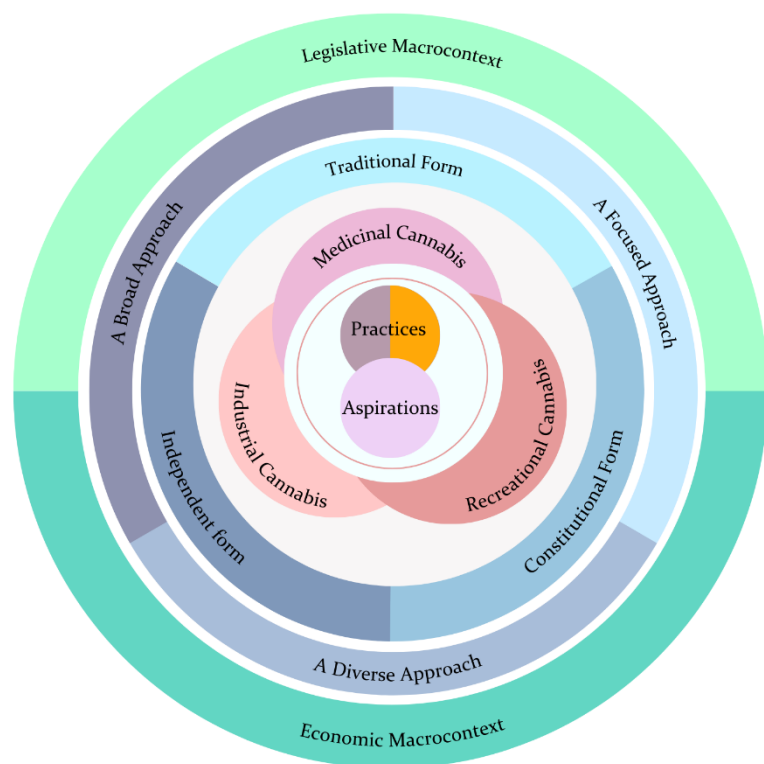
Theoretical reflections

III Introduction

In light of the results presented, a brief theoretical reflection is in place. This section presents the rationale underlying the theoretical model developed. Subsequently, it discusses how the Scoones' and Charmaz's theories have differently contributed to the study and how the theoretical approach can be strengthened in follow-up research.

III The integrated theoretical model

The rationale underlying the theoretical model is as follows: Chapter 1 presented how South Africa is currently attempting to erect a legal, economically thriving, and inclusive cannabis industry. The chapters' input to the theoretical model rests on the observation that instead of boosting the inclusive cannabis industry, the historic



dynamics of colonial moral condemnation and the contemporary legalisation process have added complexity and stagnation to the cannabis economy. Starting at the outer ring of the model, this is illustrated by the legislative macro context which impedes smallholders from commercialising of their product. This ties in the economic macro context in which the Master Plan reiterates the neoliberal principle of free market competition which strongly promotes exclusionary dynamics. These impede the commercialisation by smallholders of their product and even retain the industry in a state of flux.

Shifting to the centre of the theoretical model, Scoones' livelihoods analysis in chapter 2 showed that for successful smallholder inclusion the traditional cultivation practice of ancestral farmers should be taken as a starting point. This directly indicates that the transition towards alternative livelihood strategies as presented in the Master Plan depends on top-down guidelines connecting to the bottom-up experiences of the traditional cannabis communities in Mpondoland. By characterising the current practices and aspirations of ancestral farmers it became clear that the landrace practice does not easily fit within these pathways. Nevertheless, given the strong political ambition for inclusion, policymakers should be familiar with the fragile socio-economic position and practices of the target group to informedly alter cannabis policy.

Chapter 3 showed that previous experiences with smallholder cooperatives benefited both government and farmers. As visible on the blue ring in the model, when the constitutional and independent forms of representation are taken as a starting point, smallholder cooperatives can provide a link between the bottom-up perspectives of farmers and the top-down perspectives of government.

Lastly, the light red wings in the model illustrated chapter 4 which firstly showed that despite the many challenges, each cannabis pathway could offer opportunities for smallholder farmers. However, when the perspective of industry stakeholders are weighted in, and political and practical considerations are factored in, the industrial cannabis pathway turns out to be the most logical starting point for a pilot project to trial the use of landrace stalks for biobased building materials. For its most effective realisation, the study indicates that a focused could be best chosen.

|| Contributions of the theory

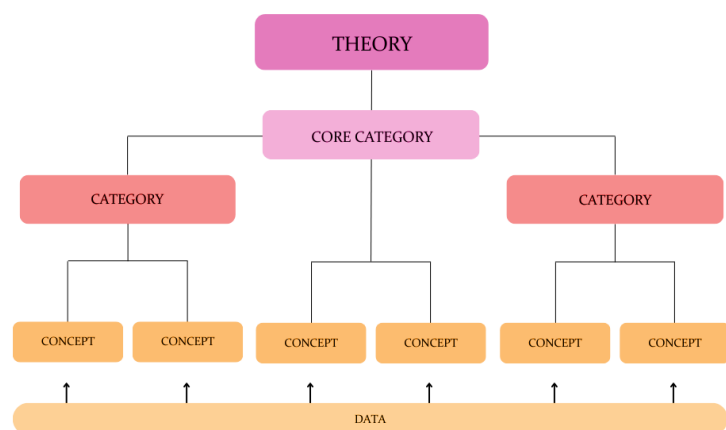
Scoones' Sustainable Rural Livelihoods framework and Charmaz's Constructivist Grounded Theory have contributed differently to the study. The livelihoods analysis has been very instructive in the preparation for the fieldwork. Especially the concept of the livelihood, its practices, its members' aspirations and its strategies were taken as the guiding principles to approach the ancestral cannabis communities in Mpondoland. With its focus on the daily practices of farmers, the livelihoods framework enabled the

ethnographic perspective on farmers' traditional cultivation. This micro perspective made apparent the large gap between the smallholders' economic opportunities and government's abstract policy discussions on the matter. This directly resulted in the recommendation for policymakers to also visit a cannabis community in Mpondoland in person to experience the farmers' plight first hand.

Additionally, Scoones' model offered the opportunity to deviate lightly from the research question by identifying a diversification of livelihood strategies as a possible way towards smallholder commercialisation. Nevertheless, since the diversification of livelihood strategies transcends the boundaries of the Master Plan, these options are not presented in the theoretical model constructed.

Constructivist Grounded

Theory has mainly contributed directly to the academic approach of this study by enabling the extensive comparison and selection of the relevant data. Rather than fitting the collected data into an existing theoretical model,



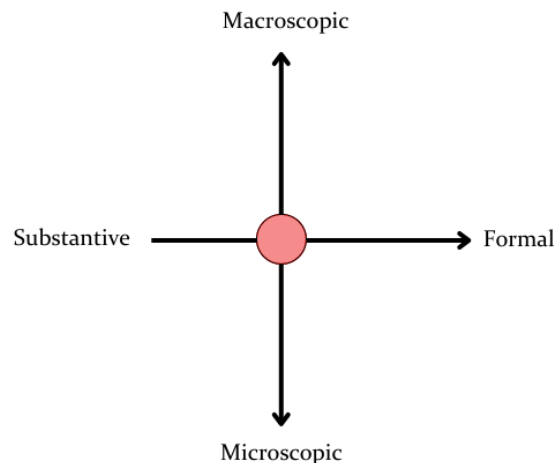
seeking theoretical saturation through the procedural steps of theoretical sampling (see Figure 2 above) allowed for the exploration of new patterns yielding the distinctions between the different modes of farmers' representation. Also the preconditions and different approaches identified fit the theoretical steps, since they form the building blocks for the core category of smallholder inclusion. Since these patterns form the foundation of various policy recommendations, the theoretical approach has thus also indirectly contributed to the practical implications of the study.

Although, ideally the procedural steps of Grounded Theory would have enabled the full abstraction of data towards a new theoretical model, the scope and depth of this study have not allowed for a coherent model to be built. Rather, the theoretical model of the study, as re-pictured above, should be regarded as an abstract tool to review crucial

elements for consideration when advancing the position of the ancestral farmers in Mpondoland.

Revisiting Glaser and Strauss' continuum of substantive-formal (see Figure 3 below), it can be determined to which context the model can be applied. There is a level of ambiguity found on this matter. On the hand, the strong demographic and geographic demarcations of the ancestral farmers in Mpondoland indicate that the model has a substantive character. This means that its concepts apply specifically to the ancestral farmers in the Mpondoland region and that their position cannot readily be equated with other farmers groups. On the other hand, the general dynamic underlying the model is that of formerly illegal smallholders needing entry to formalised and highly competitive markets. Given the multitude of farming communities finding themselves in this position, also outside the Mpondoland, the basic dynamic of economic and political inequality underlying the model can be generalised to other case studies and contexts. This hints towards the formal character of the model, which it (red dot) it in the centre of the continuum.

Scoring the model on the second continuum of microscopic-macroscopic, it is clear that this study applies to various sizes and scopes of social units and thematic fields. As example, where chapter 1 reviews the legal setup of the South African cannabis industry broadly, and thus takes on a macroscopic character, chapter 2 takes a focus on the ancestral



livelihood and thus adopts the micro perspective. Similarly with the thematic fields, the study does not only touch upon legal, economic and practical opportunities and challenges of smallholder inclusion, but also presents farmers' experiences and desires within this process. Since the theoretical model has integrated the multiplicity of perspectives, it bridges the gap between such unequivocal macro or micro analyses. This is where the Sustainable Rural Livelihoods framework and Charmaz's Constructivist

Grounded Theory have complemented each other the strongest and where this study adds new theoretical depth to the topic. Thus also on this category, this leaves the model at the centre of the continuum.

|| Theoretical improvements

The study has shown that it is challenging to find a theoretical framework that enhances the understanding of farming practices transitioning from illegality towards legality. In the attempt to approach this in its full complexity the study combined two theoretical frameworks. This, however, has also clear drawbacks that can be evaded in follow-up research. Most importantly, the theoretical coherence of the study was challenged by the different natures and premises of the two approaches. As a result from much data being relevant for both theoretical approaches, the theoretical puzzle impeded the flow of the research process. Especially when a narrower research question would be, follow-up studies will benefit from a simpler and unambiguous theoretical framework.

As a second improvement, follow-up research could focus more on a theoretical background of comparative smallholder communities facing the same free-market dynamics as the ancestral farmers in Mpondoland. Although cannabis farmers are in a special position given their long history of criminalisation, there are comparative cases to be found wherein legal smallholder farmers are socio-economically or racially excluded from markets. An increased focus on the mechanisms known to grant smallholders a shielded entry to markets might gain valuable insights to be applied to the cannabis industry.

The final conclusion

This master thesis set out to review the contents and implementation of smallholder-focused cannabis policy in South Africa. As part of the project ancestral farmers were encouraged to express their aspirations and needs to identify viable strategies for the commercialisation of landrace cannabis from Mpondoland. By comparing the traditional landrace practices with the three cannabis pathways of the National Cannabis Master Plan, the study has provided insights on the possibilities for smallholder commercialisation and thus meets its aim to function as a tool for inclusive policy-making. The objectives of this study were operationalised under the main question:

‘How can the commercialisation of cannabis by smallholders in the Mpondoland, South Africa, be integrated into the formalised cannabis industry?’

||| The main argument

Answering this question, the study shows that without targeted government intervention for the ancestral farmers in Mpondoland, inclusion is very unlikely to be realised. The ancestral farmers are clearly in need of a protected market segment in which a pilot project with their landrace cannabis can take place. Consequently, the study suggests that among the cannabis pathways of the National Cannabis Master Plan the market segment for industrial cannabis provides the most logical starting point for such a pilot project and allows for the exploration of the economic viability of their production. Taking into account the economic, political and practical feasibility, smallholders could, in the short run, best cultivate landrace stalks and apply the hurd to biobased hempcrete building materials. Such a pilot project would not only promote the preservation of the traditional cultivation practice and landrace genetics but would also allow product development and testing to be combined. Alternatively, the findings of the study indicate that the goals of the Master Plan could also be pursued by promoting alternative cash crops and cannatourism as possible livelihood strategies outside the cannabis industry.

However, the study also clearly shows that the context in which the smallholder commercialisation would need to occur is highly challenging for ancestral farmers in Mpondoland. Both politically as well as economically, they are, as an ethnic minority group, structurally excluded from the formalised cannabis industry. Most importantly, the Eurocentric orientation of the legal framework and the neoliberal principle of free market competition almost entirely exclude smallholders from the cannabis market and thus impede their opportunities for commercialisation. These exclusionary dynamics seem to reiterate the economic and political marginalisation of the Mpondoland population during the twentieth-century period of cannabis prohibition. Although the national government's discourse much emphasises the inclusion of cannabis smallholders, which has created high expectations, in practice farmers have received little to no support. In fact, recent policy changes of the Cannabis for Private Purposes Bill have even diminished economic chances of success. These observations give reason to doubt the political will to include smallholders in cannabis policies. Despite farmers are facing great hardship, the study illustrates that their main concern is their income, regardless of the exact crop they cultivate. However, the challenging climatological conditions and the widespread sentiments favouring cultural and ecological preservation of landrace, discourage farmers to autonomously improve their living standards. Although the aspirations of ancestral farmers vary between older and younger farmers, the study suggests that a pilot project of landrace commercialisation in the industrial sector is still possible and would be most successful if the traditional cultivation practice is taken as a starting point.

||| **The extensive rationale**

With the political objective of an inclusive and sustainable cannabis industry, it has become apparent that the Western pieces of legislation and that the principle of free market competition underlying the National Cannabis Master Plan have geared the industry towards capital-intensive stakeholders. These dynamics have constituted a legislative and economic context for smallholders with which government has thus ultimately countered its own political ambitions for smallholder inclusion.

Reviewing the existing cultivation practices of the ancestral cannabis in Mpondoland, it has become obvious that recent cannabis policy changes have even accelerated the structural economic decline of smallholder markets ultimately contributing to the worsening living standards of the rural population. In fact, this process has also impeded ancestral farmers to autonomously change their livelihood strategies and forced them to repeat their traditional landrace practices. In tandem, the farmers' economic hardship stands in stark contrast to the widespread romanisation of the traditional way of living, and the incorrectly classification of cannabis cultivation as a cultural necessity which has in turn also made government hesitant to intervene.

Nevertheless, the accounts of cannabis stakeholders and the experiences with the Hemp Pilot Initiatives showed that bottom-up farmers' representation and top-down guidelines for cooperatives-building are essential to bridge the gap between farmers' economic realities and the legal framework. On this note, the thesis indeed found that smallholder cooperatives can valuably offer farmers a stable offtake and can provide government with a platform for consultation. Further it was shown that although traditional authorities cannot be omitted in the formation of cooperatives, cooperatives are most likely to become sustainable if participatory and independent group-formation is linked to the existing structures of constitutional government.

Revisiting the practical side of the main question, the study's results indicate that although each pathway offers a range of opportunities for smallholders, also a considerable number of legal and practical limitations remains to be addressed. A straightforward integration of the ancestral farming practice into the current setup of the Master Plan is thus not found. Nevertheless, alternative livelihood strategies promoting the use of landrace genetics and allowing for the use of basic resources and techniques are expected to be most successful. Adhering to these criteria, the application of landrace cannabis for the growing industrial market turns out to be the best starting point for smallholder commercialisation in the short run. Piloting the use of landrace stalks for hempcrete building materials should allow the further assessment of this market opportunity. If policymakers wish to avoid the legal incongruencies on cannabis' psychoactivity, the study suggests that alternative cash crops or cannatourism

can be taken as a focus. As its most practical output, the recommendation section following below elaborates on the preconditions to be met for these livelihood strategies.

||| **Directions for future research**

In addition to the suggestions for follow-up studies mentioned in the limitations section, the study's findings suggests three topics for future research. First, a follow-up study targeting the process of cannabis policy-making and the legal contradictions would be valuable. Especially, because such an analysis could effectively contribute to the improvement of the process of policy revision. Secondly, a more practically-aimed research project could aim to test the useability of the Mpondo landrace for different products. This would be a valuable foundation for exploring new and viable smallholder markets. A last topic for a follow-up study could focus on the autonomous transition of ancestral farmers to the craft farming practice in Mpondoland. Since this transition turned out to be economically viable for a small group of farmers and partly resembles the context of this study, it would be relevant to review on which conditions their success has depended. Since, this livelihood strategy would only be viable for a select group of ancestral farmers, such a follow-up study does not have the highest priority.

Recommendations

The following seven recommendations are drafted to provide policymakers with practical steps to advance the inclusion of smallholders in the South African cannabis industry.

1. ***Drafting a special smallholder regulation***

Most importantly, the national government should draft a coherent and comprehensive piece of legislation integrating remainders of the South African illegal cannabis economy into the different cannabis pathways. This entails to legalise the cultivation, possession, trade and transport of cannabis produced by smallholder farmers, subsequently ending cannabis-related arrests. Without this action, no further steps can be made to employ cannabis for rural development. To take inclusion seriously, rather far-reaching measures appear necessary such as legislation offering smallholders sufficient market protection. Proven measures for this are promoting partnerships with licenced-companies and setting minimum prices. Similar to a micro-manufacturing liquor licence, a tiered licensing scheme to only monitor and control the end-products of cannabis would be advisable since this most effectively balances individual freedoms and harm prevention. Consequently, the commercialisation of landrace cannabis would be promoted if the Mpondo landrace strain is officially registered or if a benefit sharing scheme would be tied to the ancestral farmers or to the Mpondoland region. As a proven concepts, the innovative Rooibos Benefit Sharing Agreement or a formal appellation of origins for the Mpondo landrace could be taken as inspiration.

2. ***Matching political ambition to reality***

The national government should bridge the gap between the political discourse about smallholder inclusion and its stagnating implementation. In order for promises to be realised, both political will and an increase of relevant knowledge are required. As a first step, government staff should be educated with respect to cannabis value chains. Further, to market the smallholder's produce, cannabis production in

Mpondoland needs to be properly quantified. Then the ancestral farmers in highest need should be located in order to provide targeted support. This knowledge is not only essential for building a protective legal environment for viable smallholder businesses but also for organising consultation meetings targeting ancestral farmers. As an important follow-up action, policymakers should visit the Mpondoland cannabis communities to engage with farmers and experience their marginalised position first hand. This could be an effective way to match policy propositions with the reality of the rural economy.

3. Addressing legal incongruencies

The current incongruence on cannabis legislation impacts negatively on smallholder integration. Especially, the incomplete status of the legal framework and the ambivalent definitions of the cannabis plant impedes effective enforcement of its laws. The economic functioning of the entire industry would benefit from examining the incoherences of cannabis policy. The fragmented cannabis legislation could be enhanced by improving communication and information exchange among government ministerial departments.

4. Providing clear guidelines for smallholder representation

Despite the fact that various forms of farmers' representation exist, the step towards the formation of cooperatives is not yet made. The government could advance this process with clear guidelines on how farmers should organise and register themselves in representative units. Local extension officers could also facilitate the process of group-formation. These units could form the primary point of contact for government to issue cooperative- or individual licences. Since all farming communities fall under the national jurisdiction, the constitutional structures of provincial and local government can also be used to effectively disseminate financial and material resources to farmers.

5. Initiating a pilot project

This study suggest that a pilot project in the industrial sector is the most logical starting point for the commercialisation of smallholder-produced landrace cannabis. Such a pilot project is essential to explore viable markets for landrace cannabis and to assess different product uses and qualities. As important precondition, the project is most likely to become successful if it builds on the traditional cultivation practices, also taking into account the gender balance among farmers. The use of the landrace stalks, used for biobased building materials, would be a good starting point for a pilot. Although this option is not directly presented in the Master Plan, it could contribute to poverty alleviation and job creation in the short run. Additionally, for the monetisation of the carbon sequestration potential associated with this project a carbon credits system could be explored.

6. Exploring markets for landrace-based products

Since overproduction of cannabis can fuel the illegal circuit, it is important that farmers have a sufficient offtake of their produce. This also applies to a first pilot project trialling the application of the landrace cannabis from Mpondoland. It is thus crucial for such a pilot to both combine product development and testing with the exploration of market opportunities. Product development might fall under a research licence or can be done by one of South Africa's knowledge institutes (e.g. CSIR or one of its universities). For the exploration of markets an agreement between smallholders and licenced construction companies could be best set up. For example, a pioneering company such as Afrimat could be incentivised to source a share of its cannabis from smallholders.

7. Looking beyond the master plan

As a last recommendation the study suggest that there are opportunities for viable smallholder businesses outside the cannabis industry. Promising is the exploration of growing niche markets for alternative cash crops: Xhosa Dreamroot, Loofah, Wild Watermelons, Moringa, Bamboo, Sceletium and Geraniums. Alternatively, cannabis

tourism is a growing market for which particularly the Mpondoland region offers a plethora of economic opportunities. The provision of the appropriate infrastructure, starting with a network of paved roads connecting the rural villages, would greatly benefit these alternative economic activities.

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||| Personal communication

List of interviewees
(T. Kepe, personal communication, November 25, 2021)
(G. Zweni, Personal Communication, February 1, 2022)
(N. Gobodo, Personal Communication, March 3, 2022)
(C. Tshawe, Personal Communication, March 4, 2022)
(G. Sandile, Personal Communication, March 4, 2022)
(M. Tshonyane, Personal Communication, March 4, 2022)
(M. Madiba, Personal Communication, March 4, 2022)
(N. Ndungane, Personal Communication, March 4, 2022)
(E. Mtshengu, Personal Communication, March 5, 2022)
(F. Qoma, Personal Communication, March 5, 2022)
(G. Tshwete, Personal Communication, March 5, 2022)
(K. Mngxongo, Personal Communication, March 5, 2022)
(L. Mbeki, Personal Communication, March 5, 2022)
(N. Nyase, Personal Communication, March 6, 2022)
(L. Mxenge, Personal Communication, March 6, 2022)
(N. Nozulu, Personal Communication, March 6, 2022)
(T. Mzamane, Personal Communication, March 6, 2022)
(Z. Ndlovu, Personal Communication, March 6, 2022)
(E. van Zyl, Personal Communication, April 6, 2022)
(B. Radebe, Personal Communication, March 7, 2022)
(K. Rhoysi, Personal Communication, March 7, 2022)
(M. Tshezi, Personal Communication, March 7, 2022)
(L. Makeba, Personal Communication, May 7, 2022)

(M. Makwetu, Personal Communication, May 7, 2022)
(U. Jabavu, Personal Communication, May 8, 2022)
(A. Dzana, Personal Communication, May 8, 2022)
(K. Conteh, Personal Communication, May 8, 2022)
(F. Mandela, Personal Communication, March 17, 2022)
(S. Gola, Personal Communication, March 17, 2022)
(S. Gallow, Personal Communication, April 19, 2022)
(N. Gcaba, Personal Communication, March 25, 2022)
(H. Bucks, Personal Communication, March 25, 2022)
(L. Siboto, Personal Communication, March 27, 2022)
(N. Heinemann, Personal Communication, March 29, 2022)
(D. Matanzima, Personal Communication, April 1, 2022)
(K. de Jager, Personal Communication, April 1, 2022)
(S. Vayej, Personal Communication, April 4, 2022)
(S. Blouw, Personal Communication, April 5, 2022)
(M. Maqubela, Personal Communication, April 6, 2022)
(T. Budden, Personal Communication, April 7, 2022)
(N. Dinwayo, Personal Communication, April 14, 2022)
(T. Madliwa, Personal Communication, April 18, 2022)
(J. Hursh, Personal Communication, April 19, 2022)
(A. Verhoef, Personal Communication, April 19, 2022)
(J. Hubert, Personal Communication, April 20, 2022)
(S. Sperring, Personal Communication, April 20, 2022)
(S. Ntinzi, Personal Communication, April 22, 2022)
(P. Tembakari, Personal Communication, April 22, 2022)
(T. Madikizela, Personal Communication, April 23, 2022)

(N. Ndlaku, Personal Communication, April 25, 2022)
(A. Ngconjana, Personal Communication, April 25, 2022)
(T. Mafumbatha, Personal Communication, April 26, 2022)
(B. Matha, Personal Communication, April 26, 2022)
(M. Sisulu, Personal Communication, April 27, 2022)
(N. Sobukwe, Personal Communication, April 27, 2022)
(M. Clarke, Personal Communication, May, 1 2022)
(P. van der Hoven, Personal Communication, May 6, 2022)
(P. Mahlakata, Personal Communication, May 9, 2022)
(P. Artemides, Personal Communication, May 12, 2022)
(T. Kunene, Personal Communication, May 12, 2022)
(P. Nel, Personal Communication, May 13, 2022)
(K. Riboulet-Zemouli, Personal Communication, May 13, 2022)
(M. Kwawitz, Personal Communication, May 13, 2022)
(R. Stone, Personal Communication, May 14, 2022)

List of Appendices

Appendix 1. Full List of Research Participants

Appendix 2. Forms of Consent and Example of Interview Guide

Appendix 3. Questions of the Household Survey

Appendix 4. Results of the Household Survey and Field Tests

Table 4.1 Storage of Landrace Cannabis flower, Invutu and Seeds

Table 4.2 Annual Production Capacity of Landrace Cannabis Flower

Table 4.3 Potential Production Capacity of Mpondoland and its individual households

Table 4.4 Price Indication for Grades of Landrace Cannabis in Times of Thriving Markets

Table 4.5 Potential of Landrace Cannabis Extract for Medicinal Purposes

Table 4.6 Potential of Landrace Cannabis for Recreational Purposes

Table 4.7 Potential of Landrace Cannabis for Industrial Purposes

Appendix 5. Ethical Guidelines

Appendix 6. Examples of Cannabis Field Mapping Exercise

Appendix 7. Comparative Analysis on Smallholder entry to Cannabis Pathways

Table 7.1 Comparative Table on Smallholder Entry to the Cannabis Pathways

||| Appendix 1. Full List of Research Participants

*All participants involved in illegal activities were anonymised

Stakeholder Group	Interviewee	Community/ Function / Organisation / Institution	Personal communication
Farmer	Cebisa Tshawe	Anonymised community 1	04-03-2022
Farmer	Gcobani Sandile	Anonymised community 1	04-03-2022
Farmer	Mandla Tshonyane	Anonymised community 1	04-03-2022
Farmer	Mthobeli Madiba	Anonymised community 1	04-03-2022
Farmer	Ndiliswa Ndungane	Anonymised community 1	04-03-2022
Farmer	Esihle Mtshengu	Anonymised community 1	05-03-2022
Farmer	Fundiswa Qoma	Anonymised community 1	05-03-2022
Farmer	Gcobisa Tshwete	Anonymised community 1	05-03-2022
Farmer	Khanyiswa Mngxongo	Anonymised community 1	05-03-2022
Farmer	Lulama Mbeki	Anonymised community 1	05-03-2022
Farmer	Nocawe Nyase	Anonymised community 2	06-03-2022
Farmer	Lindelwa Mxenge	Anonymised community 2	06-03-2022
Farmer	Nomble Nozulu	Anonymised community 2	06-03-2022
Farmer	Themba Mzamane	Anonymised community 2	06-03-2022
Farmer	Zintle Ndlovu	Anonymised community 2	06-03-2022
Farmer	Bongani Radebe	Anonymised community 2	07-03-2022
Farmer	Khethiwe Rhoyi	Anonymised community 2	07-03-2022
Farmer	Mncedisi Tshezi	Anonymised community 2	07-03-2022
Farmer	Nomhle Gobodo	Anonymised community 2	03-05-2022
Farmer	Fezeka Mandela	Anonymised community 3	17-03-2022
Farmer	Simthandile Gola	Anonymised community 3	17-03-2022

Farmer	Babalwa Madikizela	Anonymised community 4	23-04-2022
Farmer	Mbulelo Sisulu	Anonymised community 4	27-04-2022
Farmer	Ntando Sobukwe	Anonymised community 4	27-04-2022
Farmer	Lubabalo Makeba	Anonymised community 5	07-05-2022
Farmer	Madoda Makwetu	Anonymised community 5	07-05-2022
Farmer	Uuka Jabavu	Anonymised community 5	08-05-2022
Farmer	Aviwe Dzana	Anonymised community 6	08-05-2022
Farmer	Khwezi Conteh	Anonymised community 6	08-05-2022
Government representative	Nicholas Heinemann	Former member of Cannabis Technical Advisory Team in Eastern Cape Rural Development Agency	29-03-2022
Government representative	Mfundo Phakama Maqubela	Former Development Institute research director of Eastern Cape Rural Development Agency	06-04-2022
Traditional authority	Chief Ngweyivelile Dinwayo	Traditional leader	14-04-2022
Government representative	Nontsikelelo Ndlaku	Dir. Development Planning Ntabankulu Local Municipality	25-04-2022
Government representative	Andile Ngconjana	Councilor within Ntabankulu Local municipality	25-04-2022
Government representative	S. Ntinzi	Umzimvubu Local Municipality	22-04-2022
Government representative	Nozuku Gcaba	Investment Promotion Ntabankulu Local Municipality	25-04-2022
Government representative	T. Mafumbatha	Mayor of Winnie Madikizela-Mandela Local Municipality	26-04-2022
Civil Society	Dumisa Matanzima	Farmers representative	03-04-2022
Civil Society	Simon Sperring	Umzimvubu Farmers Support Network	06-05-2022
Civil Society	Philasande Mahlakata	Local activist	09-05-2022
Civil Society	Myrtle Clarke	Fields of Green for All	12-05-2022
Civil Society	Sonwabile Poswa	Local activist	20-04-2022

Civil Society	P. Tembakari	Ntabankulu Farmers Association	22-04-2022
Civil Society	Greek Zweni	Umzimvubu Farmers Support Network	25-02-2022
Civil Society	Dr. Bulelani Matha	Farmers representative Winnie Madikizela-Mandela Local Municipality	26-04-2022
Entrepreneur	Harry Bucks	Cape Town	25-03-2022
Entrepreneur	Linda Siboto	Cheeba Africa	27-03-2022
Entrepreneur	Anthony Budden	Hemporium	07-04-2022
Entrepreneur	Thami Madliwa	Endalweni Trading	18-04-2022
Entrepreneur	Julia Hursh	Mthatha	19-04-2022
Entrepreneur	John Hubert	Mthatha	20-04-2022
Entrepreneur	Pierre van der Hoven	Cannabis consultant	06-05-2022
Researcher/Entrepreneur	Kristin de Jager	Qure	01-04-2022
Researcher/Entrepreneur	Arne Verhoef	Independent researcher	19-04-2022
Researcher/Entrepreneur	Dr. Thandeka Kunene	House of Hemp	12-05-2022
Researcher/Entrepreneur	Phivo Artemides	Cheeba Academy	12-05-2022
Researcher/Entrepreneur	Peter-William Nel	GESLabs	13-05-2022
Researcher/Entrepreneur	Shiksha Gallow	BioData	19-04-2022
Researcher	Sunshine Blouw	Council for Scientific and Industrial Research (former member)	05-04-2022
Researcher	Etienne van Zyl	Social Anthropologist University of South Africa	06-04-2022
Researcher	Kenzi Riboulet-Zemouli	Independent researcher	13-05-2022
Researcher	Michael Alan Kwawitz	Independent researcher	13-05-2022
Attorney	Shaad Vayej	Cannabis legal expert	12-04-2022
Attorney	Ricky Stone	Umzimvubu Farmers Support Network	14-05-2022

||| Appendix 2. Forms of Consent and Example of Interview Guide

|| 2.1 Forms of Consent

Dear participant,

My name is Tijmen Grooten, I am a master student at Wageningen University and Research in the Netherlands. I am conducting a research project on the practices and aspirations of the Mpondoland cannabis farming communities. I aim to understand how cannabis farming is currently practised, what aspirations for future agriculture are pursued and how the cannabis farming will change in the coming years.

You are here because you are willing to have an interview about this topic. Before we proceed, please read the specifics about the interview below. In this interview you will be asked about your personal experiences in the cannabis industry, your personal beliefs and goals or about your professional opinion. There are no wrong answers to these questions. At all times, it is important for both of use to feel trust, openness and equality during the interview.

This research does not make promises regarding changing a personal situation, or changing the cannabis industry. Instead, the research hopes to add to the understanding and description of farming practices, farmers' and organisational experiences, and your current situation within the context of changing policy. Interviews like this are very important to achieve that goal.

The interview is expected to last around 60 minutes and will be audio recorded with your permission. The recorded interview will be transcribed in order to analyse the information. The recording and transcription of the interview will be kept in strict confidence, with only the researcher (me) and the translator having access to it. Automatically, your name will be changed to a pseudonym, to ensure anonymity. In case you explicitly want your own name to be used, this is also possible. You are free to withdraw from the interview at any moment in time, and you are not obliged to answer questions if you do not want to.

Please sign below if you agree to participate in this interview. Thank you, in advance, for your cooperation. If you have any further questions, you can ask them now.

Sincerely, Tijmen Grooten

Consent form – participation in this interview about the Mpondoland cannabis industry

- I read the information about participating in this interview and had enough time to read the information and ask questions, which were answered satisfactory.
- I am aware that participating in this interview is voluntary and that I can stop at any moment in time, for which I do not need to provide a reason.
- I give permission to record this interview and understand that anonymous citations of this interview could be used for the research report.
- If I have any further questions, I can e-mail the researcher at tijmengrooten@hotmail.com

I hereby declare I want to participate in this research:

Participant name:

Date:

Signature:

Researcher name: Tijmen Grooten

Date:

Signature:

Mthathi-nxaxheba othandekayo,

Igama lam ndinguTijmen Grooten, ndingumfundi obalaseleyo kwiYunivesithi yaseWageningen kunye noPhando eNetherlands. Ndenza iprojekthi yophando malunga nezenzo neminqweno yoluntu lwamaMpondo olulima intsangu. Ndijonge ukuqonda indlela ulimo lwentsangu oluqhutywa ngayo ngoku, yeyiphi iminqweno ephunyezwayo yezolimo kwixesha elizayo kunye nendlela ulimo lwentsangu oluza kutshintsha ngalo kwiminyaka ezayo.

Ulapha kuba uzimisele ukuba nodliwano-ndlebe malunga nesi sihloko. Ngaphambi kokuba siqhubeke, nceda ufunde okuthe ngqo malunga nodliwano-ndlebe olungezantsi. Kolu dliwano-ndlebe uya kubuzwa malunga namava akho obuqu kwishishini lwentsangu, iinkolelo zakho kunye neenjongo zakho okanye malunga noluvo lwakho lobuchwephesha. Akukho mpendulo zingalunganga kule mibuzo. Ngawo onke amaxesha, kubalulekile ukuba zombini zisetyenziswe ukuziva ukuthenjwa, ukuvuleka kunye nokulingana ngexesha lodliwano-ndlebe.

Olu phando alwenzi zithembiso malunga nokutshintsha imeko yomntu, okanye ukutshintsha ishishini lwentsangu. Kunoko, uphando luthemba ukongeza ekuqondeni nasekuchazeni izenzo zokulima, amava abalimi kunye namava entlangano, kunye nemeko yakho yangoku ngaphakathi kwimeko yokutshintsha umgaqo-nkqubo. Udliwano-ndlebe olufana nolu lubaluleke kakhulu ukuphumeza loo njongo.

Udliwano-ndlebe kulindeleke ukuba luhlale malunga nemizuzu engama-45 kwaye luya kurekhodwa ngokuvakalayo ngemvume yakho. Udliwano-ndlebe olurekhodiweyo luya kubhalwa ukuze kuhlalutywe ulwazi. Ukurekhodwa kunye nokukhutshelwa kodliwano-ndlebe kuya kugcinwa kuyimfihlo engqongqo, ngumphandi (mna) kunye nomguquleli kuphela abanokufikelela kuko. Ngokuzenzekelayo, igama lakho liza kutshintshwa libe ligama elingelilo, ukuqinisekisa ukungaziwa. Kwimeko apho ufuna ukuba igama lakho ngokucacileyo lisetyenziswe, oku kuyenzeka. Ukhululekile ukuba urhoxe kudliwano-ndlebe nangawuphi na umzuzu ngexesha, kwaye awunyanzelekanga ukuba uphendule imibuzo ukuba awufuni.

Nceda usayine ngezantsi ukuba uyavuma ukuthatha inxaxheba kolu dliwano-ndlebe. Enkosi, kwangaphambili, ngentsebenziswano yakho. Ukuba uneminye imibuzo, unokuyibuza ngoku.

Ngokuzithoba, uTijmen Grooten

Ifomu yemvume – ukuthatha inxaxheba kolu dliwano-ndlebe malunga noshishino lwentsangu emaMpondweni

- Ndifunde ulwazi malunga nokuthatha inxaxheba kolu dliwano-ndlebe kwaye ndibe nexesha elaneleyo lokufunda ulwazi nokubuza imibuzo, ethe yaphendulwa ngokwanelisayo.
- Ndiyazi ukuba ukuthatha inxaxheba kolu dliwano-ndlebe kukuzithandela kwaye ndingayeka nangawuphi na umzuzu ngexesha, apho kungekho mfuneko yokuba ndinike sizathu.
- Ndinika imvume yokurekhoda olu dliwano-ndlebe kwaye ndiyaqonda ukuba izicatshulwa ezingachazwanga zolu dliwano-ndlebe zingasetyenziselwa ingxelo yophando.
- Ukuba ndinayo eminye imibuzo, ndingathumela i-imeyile kumphandi ku-tijmengrooten@hotmail.com
-

Ndiyabhengeza ukuba ndifuna ukuthatha inxaxheba kolu phando:

Igama lomthathi-nxaxheba:

Umhla:

Umsayino:

Igama lomphandi:

Umhla:

Umsayino:

|| 2.2 Example of Interview Guide

Introduction

Give a brief introduction of the topic.

- Could you introduce yourself briefly?

.....

- Who do you represent in this interview? (individually or household)

.....

- Do you have children? If yes, how many?

.....

What farmers do

- Can you describe how cannabis farming is organised in your community?

For example, who makes decisions, are there role divisions and what do other people think of your cultivation?

.....

- How much time per week do you spend on cultivation and processing practices?

.....

- Together with who do you cultivate and process your cannabis?

.....

- Can you describe what are the most important activities during the year in your cultivation?

(Description of the main activities in a logical unit (seasons). At least a description and placement of the main activities. Buying seeds, soil preparation, maintenance, harvest, processing, sales. What, when, where, from who and what does it cost?)

.....

- Can you name all the materials that you use for cannabis cultivation? (e.g. gear, machines, fertilisers, packaging)

.....

- Can you name all infrastructure that you use for cannabis cultivation? (e.g. buildings, roads, vehicles & services)

.....

- Can you name all natural elements that you use for cannabis cultivation? (e.g. seeds, irrigation, rain, soil type)
.....
- Has your cannabis cultivation expanded, remained stable, declined or fluctuated over the past five years?
Is there a need to increasingly invest money in your cultivation?
.....
- Can you describe the change in income from cannabis over the past five years?
What is the current price of your produce?
.....
- Can you describe your trade network?
Who are the most important buyers and sellers to you?
.....
- Do you experience competition?
If yes, from who?
.....
- Is it clear to you what the official rules are for your cultivation?
If yes, can you describe them briefly? – If no, would you like to know them and where would you then go to learn about them?
.....

What do farmers want / think

- What are the main reasons for your involvement in cannabis cultivation?
(Options: income, increased well-being, reduced vulnerability, improved food security, more sustainable uses of the natural resource base, cultural destiny, recovered human dignity. Later categorise these outcomes)
.....
- What do you think about your cannabis cultivation?
What is the best aspect of it?
What is the worst aspect of it?
.....
- Is there another meaning of cannabis that brings you income?

If yes, can you describe this (these) meaning(s)?

.....

- Why are the Mpondoland cannabis genetics, knowledge or practices special and valuable?

.....

- What do you think about the current official rules about your farming?

.....

How your practice might change

- If you think about your future work, do you intent to stay active in cannabis farming?

If no, what would you like to do? – If yes, if you would be able to design your ideal farming practices in five years from now, what would this look like?

.....

(First, introduce to the farmers that the government is thinking about how to best support the Mpondoland region. They are working on Medicinal, industrial and recreational cannabis. This could potentially change their agricultural practices in the near future)

- If you would need to choose between production of cannabis, Hemp or Medicinal cannabis, what would you choose and why?

.....

- To what extent are you open for your agricultural practice to change?

If you are open to this, what elements cannot be changed and why not?

(Options: Producing under a licence, Fencing, Indoor growth, New seeds (cheaper but other genetics), Cooperation model farming, Working as farmer for a larger company, Working with machines, Processing other parts of the plant (seeds, fibres), Growing this plant but without flowers, Growing cannabis but with higher THC levels)

.....

- How do you feel about producing cannabis or Hemp for a regional cooperative?

.....

- What do you think about attracting tourists to the Mpondoland if it makes your cannabis cultivation easier?

.....

Question to other stakeholders

- Can you briefly describe your relation to policies regarding cannabis cultivation in South Africa?

.....

- What are the main reasons for Mpondoland cannabis smallholders to be structurally involved in cannabis cultivation?

(Options: More income, increased well-being, reduced vulnerability, improved food security, more sustainable use of the natural resource base, and recovered human dignity. Later categorise these outcomes (economic, cultural, spiritual, practical, etc.))

.....

- Can you describe the economic and social potential of cannabis and Hemp value chains in Mpondoland?

What are the main reasons that impede these potentials?

.....

- What do you think of the way the National cannabis Master Plan aims to achieve smallholder inclusion?

.....

- Can you describe the current status of the implementation of the cannabis Master Plan on your political level?

.....

- To what extent does your government department aim to regulate the cannabis market? For example, will seed supply and off-taking be part of the government's responsibility in the future?

.....

The general policy design

- What do you think about an exception to licensing and formal cultivation for smallholder cannabis and Hemp farmers?

.....

- Do you think that the national government should grant and expungement of criminal records or practice restorative justice towards the Mpondoland cannabis smallholders?

.....

- What will be the effects of government regulation on prices of cannabis and Hemp?

-
- Do you think that public policies should take into account the fact that a large share of cannabis farmers are female?

If yes, how can policy be inclusive towards womanhood? – If no, why is that not important?

.....

- Do you know to what extent Mpondoland cannabis smallholders are open towards change of their agricultural practices?

If yes, according to them, what elements cannot be changed and why not? - If no, do you feel it is important to know that?

(Options: Producing under a licence, Fencing, Indoor growth, New seeds (cheaper but other genetics), Cooperation model farming, Working as farmer for a larger company, Working with machines, Processing other parts of the plant (seeds, fibres), Growing this plant but without flowers, Growing cannabis but with higher THC levels)

.....

- If you could give advice, which value chain (cannabis, Hemp or Medicinal cannabis) would best connect to the aspirations and practices of the Mpondoland cannabis smallholders?
-

Medicinal cannabis

- Can you describe what smallholder inclusion looks like in the medicinal cannabis value chain?
-

- Which markets will smallholders be able to serve?
-

- How do you think smallholder farmers need to change their practices in order to participate in the medicinal cannabis industry?
-

- What do you think about the cooperation model for medicinal cannabis cultivation as strategy for smallholder inclusion?
-

- How do you think the high financial burden for smallholders (e.g. for licences) can be overcome?
-

- How do you think the high quality standards for medicinal cannabis be can achieved by smallholders?

.....

Industrial Hemp

- Can you describe how smallholder inclusion looks like in the industrial hemp value chain?

.....

- Which markets are most viable for smallholder hemp production?

.....

- How do you think smallholder farmers need to change their practices in order to participate in the industrial hemp industry?

.....

- What do you think about the cooperation model for hemp cultivation as strategy for smallholder inclusion?

.....

- How do you think the logistical challenges for smallholder hemp cultivation (such as remote cultivation) can be overcome?

.....

- What do you think about the introduction of hemp seeds in the Mpondoland region in light of the protection of natural/cultural heritage?

If this would be harmful, how can the government prevent this from happening?

.....

Recreational cannabis

- Can you describe how smallholder inclusion looks like in the formal recreational cannabis value chain?

.....

- In light of the decreasing demand for low-THC level cannabis, which markets will smallholders be able to serve?

.....

- How do you think smallholder farmers need to change their practices in order to participate in the formal recreational cannabis industry?

-
- What do you think about the possibility of combining tourism with cannabis production in Mpondoland?
-

||| Appendix 3. Questions of the Household Survey

- How many kilograms of cannabis flower do you have in storage?

.....

- How many kilograms of invutu (trimming leftovers) do you have in storage?

.....

- How many kilograms of cannabis seed do you have in storage?

.....

- On how many cannabis fields does your household cultivate?

.....

- How much cannabis do you harvest per season?

.....

- When did you have your last customer?

.....

- For which price do you currently sell your cannabis?

.....

- Do you have an additional income besides cannabis sales? If so, how much is the additional income?

.....

||| Appendix 4. Results of the Household Survey and Field Tests

|| Summary Factsheets

Factsheet 1.

Illustration of the Annual Production and the Economic Potential of Landrace Cannabis per Household in Mpondoland

Production capacity

The size of the average cannabis field in Mpondoland is 3064 m². With an average of 3 fields, each household has a cultivation area of 9359 m².

Recreational cannabis

Each household produces 74.8 kg of cannabis flower annually. Against current prices, this holds a potential retail value of R56,997. This flower could be converted into 2.62 kg of hashish, or alternatively in 74,750 pre-rolled joints.



Industrial cannabis

Each household produces 7.7 tons of landrace stalk annually, which sequesters 18.7 tons of carbon. This production equals 5.4 tons of clean hurd annually, which has a potential retail value of R21,554. From this amount of hurd, 5400 hempcrete blocks can be made.

Medicinal cannabis

Each household harvests enough cannabis to produce 3 kg of feco annually. Against current prices, this has a potential retail value of R300,000.

Factsheet 2.

Illustration of the Annual Production and the Economic Potential of Landrace Cannabis of all smallholders of Mpondoland

Production capacity

The size of the total cannabis cultivation acreage in Mpondoland is between 18,719 - 56,157 ha. This equals between 12,264 - 36,790 rugby fields. There are between 20,000 - 60,000 smallholder cannabis farmers in Mpondoland.

Recreational cannabis

The Mpondoland farmers combinedly harvest between 1500 - 4485 tons of cannabis flower annually. This holds a potential retail value of R1.1 billion minimally. This converts into between 52 - 157 tons of hashish which has a minimum retail value of R2.6 billion.



Industrial cannabis

The Mpondoland harvests between 168,234 - 504,703 tons of landrace stalk annually, which sequesters between 374,000 - 1.1 million tons of carbon. This equals between 112,767 - 338,301 tons of clean hurd annually, with a minimum retail value of R451 million. From this amount between 49,000 - 147,000 RDP houses can be built.

Medicinal cannabis

The Mpondoland farmers combinedly harvest enough cannabis to produce between 60 - 180 tons of feco annually. Against current prices, this has a minimum potential retail value of R5.9 billion.

|| Extended Tables

| Table 4.1 Storage of Landrace Cannabis flower, Invutu and Seeds

Farmer #	Flower (kg)	Invutu (kg)	Percentage of storage is flower	Seeds (litre)	Total storage	Number of fields	Annual flower harvest per field (kg)	Number of weeks without customers
1	60	18	77%	0	78	5	12	13
2	0	24	0%	0	24	2	0	11
3	230	84	73%	0	314	11	21	24
4	20	0		5	20	2	10	36
5	35	0		10	35	3	12	36
6	50	60	45%	10	110	4	13	13
7	20	24	45%	40	44	3	7	13
8	60	18	77%	50	78	4	15	36
9	200	36	85%	50	236	5	40	18
10	10	0		1	10	1	10	36
11	1	12	8%	20	13	2	1	17
12	20	18	53%	7	38	2	10	

13	5	6	45%	20	11	4	1	48
14	10	36	22%	60	46	5	2	
15	20	12	63%	40	32	2	10	13
16	20	36	36%	50	56	3	7	13
17	0	0		3	0	2	0	13
18	50	96	34%	60	146	5	10	36
19	10	36	22%	25	46	9	1	48
20	5	12	29%	0	17			
21	5	6	45%	0	11	3	2	4
22	30	48	38%	60	78			
23	30	48	38%	120	78	5	6	
24	120	36	77%	20	156	4	30	24
25	60	36	63%	20	96	1	60	
26	130	72	64%	5	202	4	33	13
27	0	0		10	0	3	0	13
28	0	24	0%	40	24	2	0	13

29	10	12	45%	20	22	2	5	13
30	22	48	31%	20	70	4	6	13
Averages	41	29	45%	26	70	3	11	22
Medians	20	24		20	45	2	8	13
Totals	1233	858		766	2091	129		

Table 4.2 Annual Production Capacity of Landrace Cannabis Flower

Farmer	Size of production	Unit (30% ratio seed/flower)	Number of fields	Production of all fields (litre)	Production per field (litre)	Real weight of flowers and seeds per field (litre)	Real weight of flowers of total harvest (kg)
1	10	sacs of 50l per year (2 fields)	2	500	250	50	100
2	40	litres per 1 field	1	40	40	8	8
3	6	50 kg sacs of 3 fields	3	300	100	20	60
4	5	sacs of 50 per 2 fields per year	2	250	125	25	50
5	48	20 litre buckets out of 3 fields	3	960	320	64	192
6	14	20 litre buckets 1 field	1	280	280	56	56

7	2	sacs of 50 litres on 1 field	1	100	100	20	20
8	10	20 litre buckets 1 fields	1	200	200	40	40
9	7	20 litre buckets 1 fields	1	140	140	28	28
10	5	20 litre buckets 1 fields	1	100	100	20	20
11	15	50 litre sacks of 50 litre 5 fields per season	5	750	150	30	150
12	4	50 litre sacks	1	200	200	40	40
13	2	50 litre sacks per 2 fields	2	100	50	10	20
14	20	20 litre bags on 2 fields	2	400	200	40	80
15	1	50 litre sac on 1 field	1	50	50	10	10
Totals			27	4370	2305	461	874
Averages			2	291	154	31	58
Median			1	200	140	28	40

| Table 4.3 Potential Production Capacity of Mpondoland and its individual households

	Value 1	Unit	Value 2	Unit	Note
Average field size per household	3064	m2	0.3	ha	
Surface of 165 cannabis fields	523964	m2	52.4	ha	
Available land per household	9527	m2	1.0	ha	Method 1: Total acreage of two communities / by 55 households
Available land per household	9192	m2	0.9	ha	Method 2: Average field size per household * median number of fields per households
Available land per household	9359	m2	0.9	ha	Average of two methods
Average annual flower harvest per field	11	kg			Measurement 1: Because stored harvest is simultaneously sold in small quantities, these production estimates must be considered to be conservative at times when demand is up.
Average annual flower harvest per field	42	kg			Measurement 2: Real flower weight, based on a weight conversion of 30% from seed+flower to flower
Average annual flower harvest per field	27	kg			Average of two methods
Average annual flower harvest per household	79.5	kg			Method 1: Average harvest per field * average number of fields per household
Average annual flower harvest per household	70	kg			Method 2: Total village production / 55 households
Average annual flower harvest per household	74.8	kg			Average of two methods
Retail value of annual flower harvest per household	56997	ZAR	3209	US Dollars	Based on average kilo price R762,5. Based on currency exchange rate of 09-11-2022

Size of all cannabis fields in Mpondoland (lower boundary)	187189691	m2	18719	ha	Based on 20.000 farming households.
Size of all cannabis fields in Mpondoland (upper boundary)	561569072	m2	56157	ha	Based on 60.000 farming households.
Potential annual flower harvest Mpondoland (lower boundary)	1495000	kg	1495	tons	Based on 20.000 farming households * average flower production per household
Potential annual flower harvest Mpondoland (upper boundary)	4485000	kg	4485	tons	Based on 60.000 farming households * average flower production per household
Potential retail value of annual flower harvest Mpondoland (lower boundary)	1,139,937,500	ZAR	64,178,481	US Dollars	Based on average kilo price R762,5 and 20.000 farming households. Based on currency exchange rate of 09-11-2022
Potential retail value of annual flower harvest Mpondoland (upper boundary)	3,419,812,500	ZAR	192,535,444	US Dollars	Based on average kilo price R762,5 and 60.000 farming households. Based on currency exchange rate of 09-11-2022.

Table 4.4 Price Indication for Grades of Landrace Cannabis in Times of Thriving Markets

	Grade 1	Grade 2	Grade 3
Lower price boundary per grade	R2000	R600	R500
Upper price boundary per grade	R2500	R800	R600
Averages	R2250	R700	R550
Difference in retail value between grades	0%	69%	76%

| Table 4.5 Potential of Landrace Cannabis Extract for Medicinal Purposes

	Value 1	Unit 1	Value 2	Unit 2	Note
Average annual flower harvest per household	74.8	kg	74800	grams	Average of two methods
Potential annual production of pure abstract for feco per household	3.0	kg	3000	grams	Based on the average flower production per household and an average return of 4% pure extract
Potential retail value of annual production of pure for feco abstract per household	300,000	ZAR	16890	US Dollars	Based on average gram price of R100. Based on currency exchange rate of 09-11-2022
Potential annual feco production Mpondoland (lower boundary)	59800	kg	59.8	tons	Average return of 4% pure extract.
Potential annual feco production Mpondoland (upper boundary)	179400	kg	179.4	tons	Average return of 4% pure extract
Potential retail value of annual feco production Mpondoland (lower boundary)	5,980,000,000	ZAR	336,674,000	US Dollars	Based on average gram price R100. Based on currency exchange rate of 09-11-2022.

Potential retail value of annual feco production Mpondoland (upper boundary)	17,940,000,000	ZAR	1,010,022,000	US Dollars	Based on average gram price R100. Based on currency exchange rate of 09-11-2022.
--	----------------	-----	---------------	------------	--

Table 4.6 Potential of Landrace Cannabis for Recreational Purposes

	Value 1	Unit 1	Value 2	Unit 2	Note
Annual production of flower material per household	74.8	kg	74750	grams	Average of two methods. Based on a weight conversion of 20%
Potential annual hashish production per household	2.62	kg	2616	grams	Based on the average flower production per household and an average return of 3,5% hash
Potential retail value of annual hashish production per household	130813	ZAR	7365	US Dollars	Based on average gram price R50. Based on currency exchange rate of 09-11-2022.
Potential annual pre-rolled joints production per household	74750	joints			Based on contents of 1 gram of flower per joint
Potential retail value of annual pre-rolled joints production per household	373750	ZAR	21042	US Dollars	Based on minimum price of ZAR 5 per joint. Based on currency exchange rate of 09-11-2022.
Potential annual hashish production Mpondoland (lower boundary)	52325	kg	52.3	tons	Average return of 3,5% pure extract
Potential annual hashish production Mpondoland (upper boundary)	156975	kg	157	tons	Average return of 3,5% pure extract

Potential retail value of annual hashish production Mpondoland (lower boundary)	2,616,250,000	ZAR	147,294,875	US Dollars	Based on average gram price R50. Based on currency exchange rate of 09-11-2022.
Potential retail value of annual hashish production Mpondoland (upper boundary)	7,848,750,000	ZAR	441,884,625	US Dollars	Based on average gram price R50. Based on currency exchange rate of 09-11-2022.
Potential annual pre-rolled joints production Mpondoland (lower boundary)	1495000000	joints	1495	million joints	Based on contents of 1 gram of flower per joint
Potential annual pre-rolled joints production Mpondoland (upper boundary)	4485000000	joints	4485	million joints	Based on contents of 1 gram of flower per joint
Potential retail value of annual pre-rolled joints production Mpondoland (lower boundary)	7,475,000,000	ZAR	420,842,500	US Dollars	Based on minimum price of R5 per joint. Based on currency exchange rate of 09-11-2022.
Potential retail value of annual pre-rolled joints production Mpondoland (upper boundary)	37,375,000,000	ZAR	2,104,212,500	US Dollars	Based on minimum price of R5 per joint. Based on currency exchange rate of 09-11-2022.

| Table 4.7 Potential of Landrace Cannabis for Industrial Purposes

	Value 1	Unit 1	Value 2	Unit 2	Note
Average stalk length	203	cm			Field sample executed by the UFSN and Qure

Average stalk diameter	2.6	cm			
Average seasonal stalk harvest per m2	0.975	kg	975	grams	
Average seasonal tops and seed harvest per m2	0.36	kg	360	grams	
Average seasonal seed harvest per m2	0.05	kg	50	grams	
Average seasonal dried leaves harvest per m2	0.04	kg	40	grams	
Average seasonal fine stalks, dust and waste harvest per m2	0.10	kg	100	grams	
Average annual stalk harvest per household	9288	kg	9.3	tons	Method 1: Total acreage of cannabis plots of two villages / number of households
Average annual stalk harvest per household	9125	kg	9.1	tons	Method 2: m2 stalk production * average field size per household
Average annual stalk harvest per household	4680	kg	4.7	tons	Method 3; Based on average stalk production during the Hemp Trials of 5 tons per hectare
Average annual stalk harvest per household	7698	kg	7.7	tons	Average of three methods
Potential annual clean hurd harvest per household	5389	kg	5.4	tons	70% hurd return from stalks

Potential retail value of annual clean hurd harvest per household	21,554	ZAR	1213	US Dollars	Based on an average base price (prior to import from the Netherlands) of 4000 rand per ton of clean hurd. Based on currency exchange rate of 09-11-2022
Annual stalk harvest Mpondoland (lower boundary)	168233949	kg	168234	tons	Average of two methods
Annual stalk harvest Mpondoland (upper boundary)	504701847	kg	504702	tons	Average of two methods
Potential annual clean hurd harvest in Mpondoland (lower boundary)	112767164	kg	112767	tons	Average of two methods
Potential annual clean hurd harvest in Mpondoland (upper boundary)	338301493	kg	338301	tons	Average of two methods
Monetary retail value of clean hurd harvest of Mpondoland (lower boundary)	451,068,658	ZAR	25395165	US Dollars	Based on an average base price (before import from the Netherlands) of R4000 per ton of clean hurd. Based on currency exchange rate of 09-11-2022
Monetary retail value of clean hurd harvest of Mpondoland (upper boundary)	1,353,205,973	ZAR	76185496	US Dollars	Based on an average base price (before import from the Netherlands) of R4000 per ton of clean hurd. Based on currency exchange rate of 09-11-2022
Total number of hempcrete blocks than can be annually produced in Mpondoland (lower boundary)	112767164	Hempcrete blocks			70% hurd return from stalks, 1kg of hurd per block

Total number of hempcrete blocks than can be annually produced in Mpondoland (upper boundary)	338301493	Hempcrete blocks			70% hurd return from stalks, 1kg of hurd per block
Number of hempcrete blocks required for RDP house	2300	Hempcrete blocks			
Number of RDP houses that can be built from Mpondolands' stalk production (lower boundary)	49029	houses			
Number of RDP houses that can be built from Mpondolands' stalk production (upper boundary)	147088	houses			
Amount of annually sequestered Co2 per hectare of hemp	30	tons			Based on 2 life-cycles, according to EIHA
Amount of annually sequestered Co2 per hectare of Mpondo landrace	20	tons			Based on 2 life-cycles, estimation modified conservatively
Amount of carbon sequestered per household	18.7	tons			
Annual amount of carbon sequestered through landrace cultivation in Mpondoland (lower boundary)	374379	tons			

Annual amount of carbon sequestered through landrace cultivation in Mpondoland (upper boundary)	1123138	tons			
Potential value of the annual amount of carbon sequestered through landrace cultivation in Mpondoland (lower boundary)	382,465,116	ZAR	21,532,786	US dollars	Based on currency exchange rate of 09-11-2022
Potential value of the annual amount of carbon sequestered through landrace cultivation in Mpondoland (upper boundary)	1,124,897,400	ZAR	63,331,724	US dollars	Based on currency exchange rate of 09-11-2022

||| Appendix 5. Ethical Guidelines

These are the American Anthropological Association guidelines reviewed in preparation of fieldwork. Some of the principles are straightforward, other require some specification:

1. I will no harm to the research participants or to the communities in which they live.

2. I will be open and honest regarding my work and my objectives

When visiting farming communities, where possible, the local headman or sub-headman was informed about my presence and objectives. Also, I have been honest towards all participants about my limited capacity to change their situation directly through this research.

3. I will obtain informed consent and the necessary permissions

Before starting the interviews, the participants were asked to sign a form of consent (see Appendix 3). This document was translated into the appropriate language (Xhosa, Zulu and English) and states that the study will be published online. The anonymity of all research participant engaged in illegal activities is guaranteed, unless requested otherwise. In case of illiteracy of participants, the interpreter gave an elaborate explanation and was then authorised to sign.

4. I will weigh competing ethical obligations due collaborators and affected parties

Importantly, before engaging with the rural farming population, I have made clear that my study is independent of the national government. I have however also been open about the possibility that government officials might read the final draft of the research report.

5. I will make my results accessible for all participant after the research

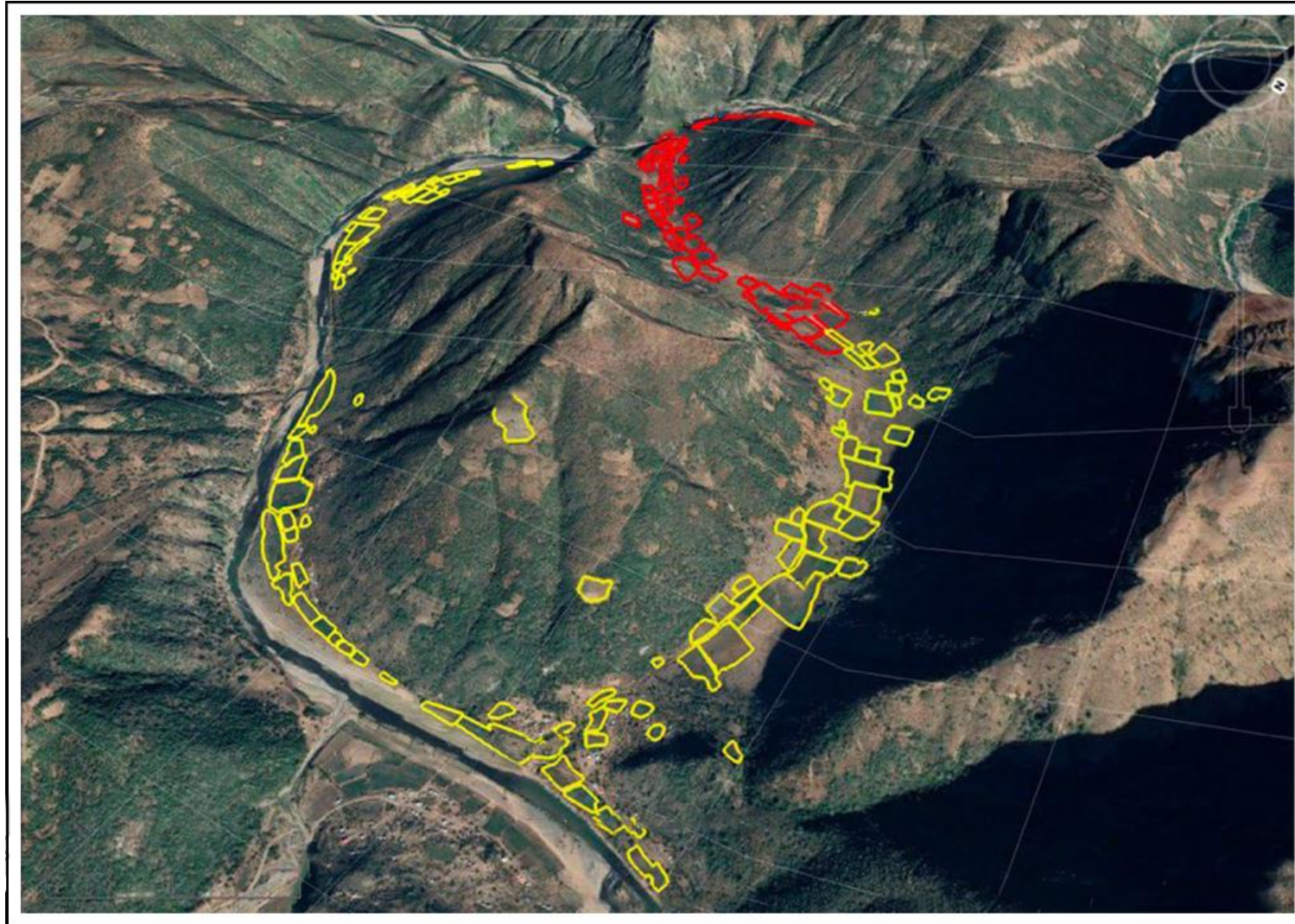
I will distribute the final thesis to all participants. For the rural population, the study will be sent to the UFSN which can facilitate its further distribution in case of interest.

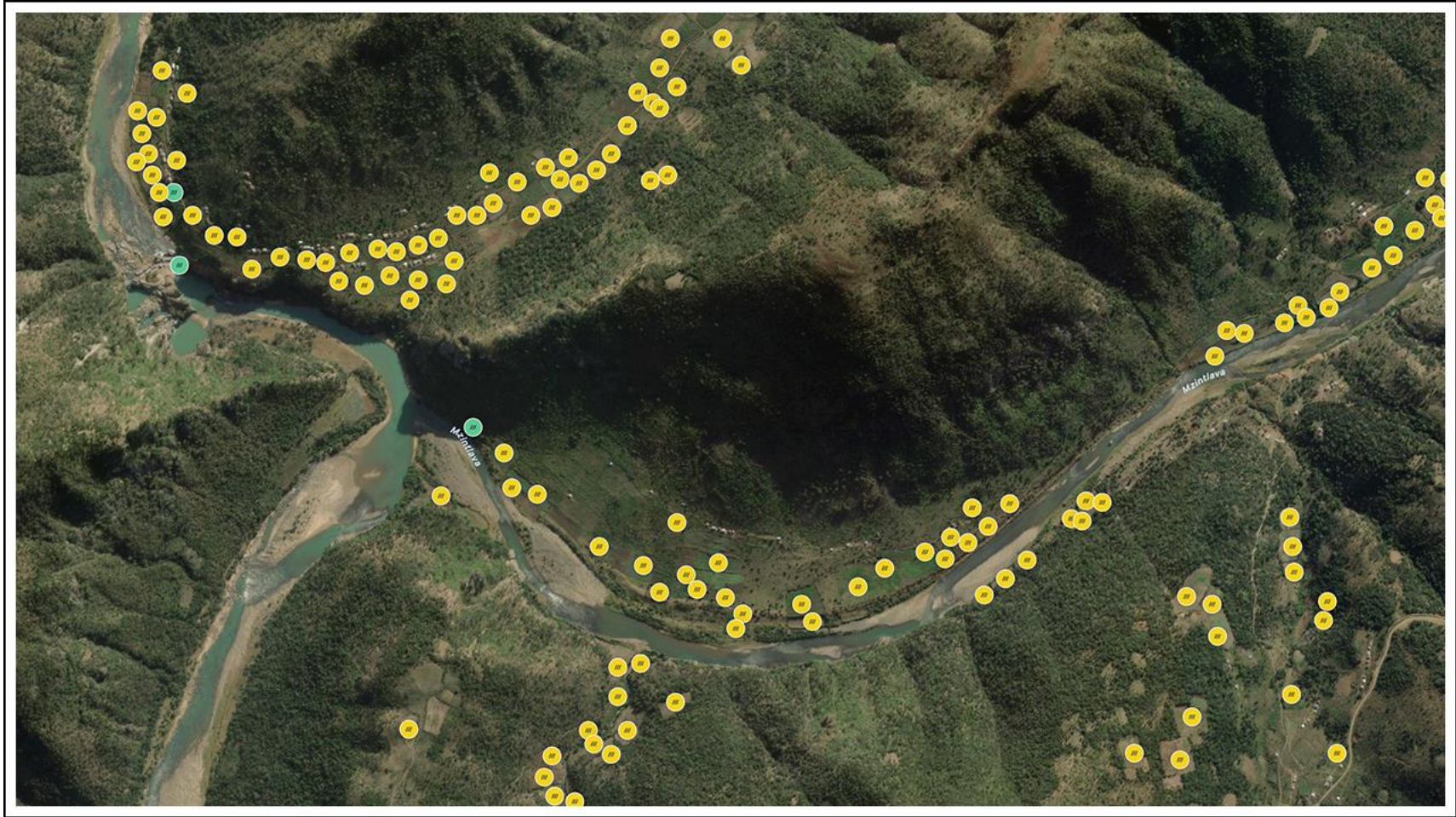
6. I will protect and preserve my records during and after the fieldwork

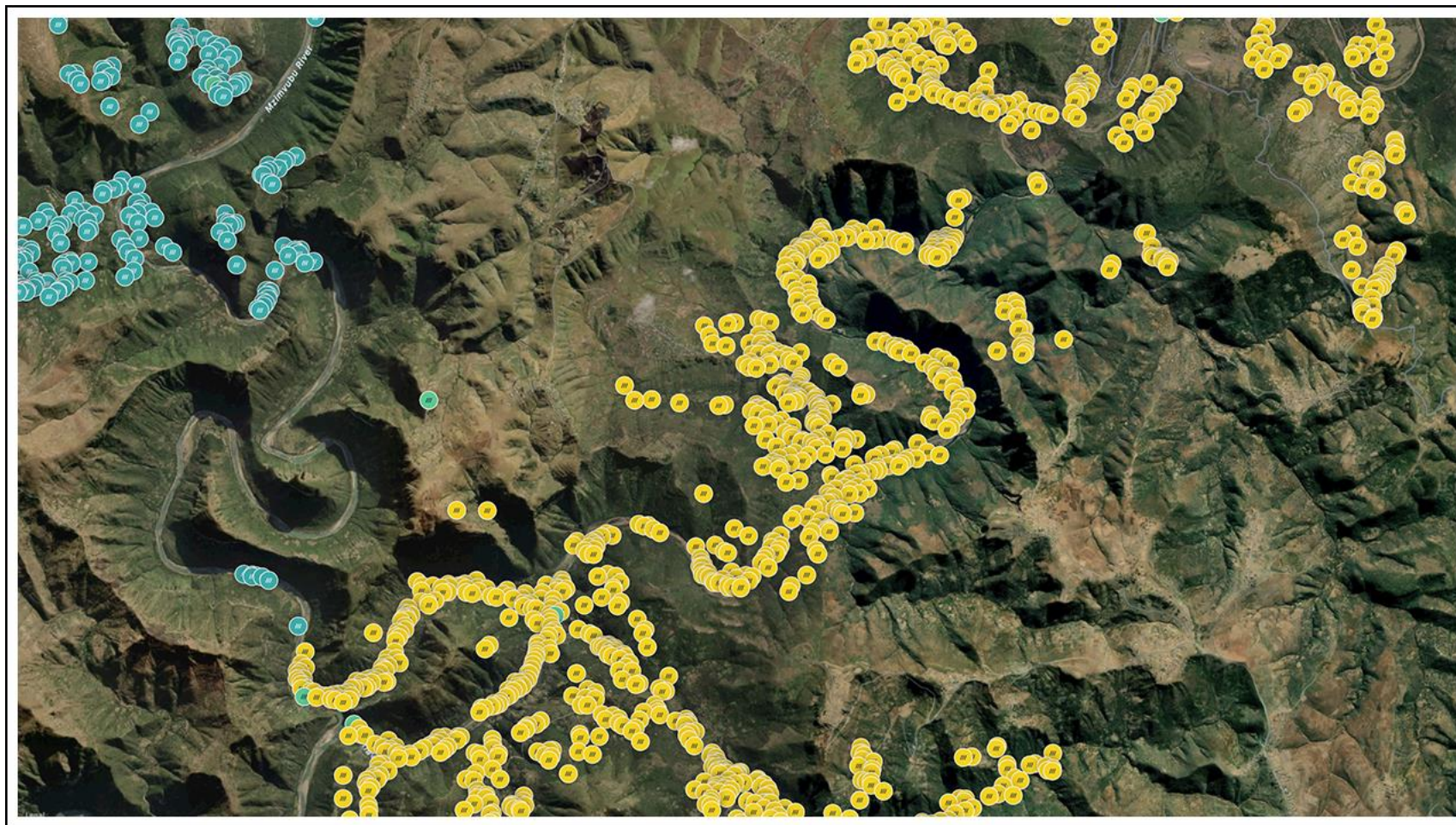
With consent of the participant, the interviews are recorded on audio. The protection of this material was guaranteed through regular backups on online and offline locations. All recordings will be deleted after the final evaluation of this thesis.

7. I will maintain respectful and ethical professional relationships with all participants

||| Appendix 6. Examples of Cannabis Field Mapping Exercise







||| Appendix 7. Comparative Analysis on Smallholder Entry to Cannabis Pathways

| Table 7.1 Comparative Table on Smallholder Entry to the Cannabis Pathways

	Landrace as medicinal cannabis	Landrace as recreational cannabis	Landrace as industrial cannabis
Economic indicators			
Existence of sufficient market demand of landrace based products	Speculation about its potential but no clinical trials conducted	Market demand has been superseded by foreign cannabis strains	Speculation about its potential, but first tests are in an initial stage
Estimated retail value of annual harvest per household	R300,000 for pure extract for feco	R130813 – 373750 for pre-rolled joints, hash or feco	R21,554 for clean hurd
Product diversity	Narrow range of products	Moderate range of products	Very broad range of products
Products already in used in SA	Cannabis-based medicine are use marginally in the formalised health care system	Cannabis products (like oils, dabs and extracts) are used in recreational circuit but marginally	Yes, but only as imported products
Scale of cultivation required	Probable surplus production for medicinal application, thus current scale exceeds market size	Market is suitable for individual smallholder supply and does not require large-scale production	Economies of scale required, thus smallholder cooperatives are needed
Job creation capacity	Limited job creation capacity due to limited market size and absence of smallholder processing	Expansion of practices with production of new products creates an expansion of job opportunities	Due to large potential demand growth has high job creation capacity
Political indicators			

Possibility of preservation of the traditional practice	Medicinal facilities can clean current landrace	Expansion of current practices	If landrace is used for industrial purpose only marginal alterations in processing and cultivation are required
Legal framework available to expand with smallholder provision	Smallholder provision can be linked to existing SAPHRA regulation, but licence-holders need to be enabled to contract outdoor-growing smallholders	Legal framework still absent	Smallholder provision can be linked to existing hemp regulation, but landrace needs to be registered as a hemp cultivar
Legal partners available to connect smallholder practice to	SAPHRA-licenced facilities are present in SA	Legal partners are absent because of legal void	Hemp processing companies are present in SA
Legal outlets available for landrace products	Eurocentric pharmacies and traditional medicine providers	Cannabis Social Clubs were banned, the illegal market rules	Hemp entrepreneurs sell imported hemp in SA
Practical indicators			
Level of adaptation to current cultivation practices required	Medium adaptation required on plant selection, improvement of safety and hygiene standards and safe transport	Little adaptations required on plant selection and drying. Extension of basic processing is relatively simple.	Medium adaptations required on plant selection, improvement, processing and transport
Exclusionary elements	Due to limited market share for cannabis-medicine, additional offtake markets are required		Cross pollination is a threat to mixed-application of the landrace and is thus difficult to combine with medicinal and recreational markets
Formalised farmers' cooperative required	Yes, due to coordination and standardisation	No, because recreational products allow diversity of quality and type	Yes, due to large production capacity required

